

Contact: Diana Gonzalez

**PROFESSIONAL DEVELOPMENT ASSIGNMENT REPORTS FOR FY 2014**

**Action Requested:** Receive the professional development assignment reports submitted by the Regent universities for FY 2014.

**Executive Summary:** Each year, the Board of Regents is asked to approve faculty professional development assignments as specified in the Board Policy Manual §4.09. In December 2012 (Agenda Item #6a), the Board approved 125 professional development assignments for FY 2014. Board Policy §4.09E directs the institutions to submit a yearly report of the completed professional development assignments. HF 45 specifies that “the board shall annually prepare a report comparing each assignment proposal to the results received.”

A brief description of each professional development assignment completed in 2013-2014 is available in Attachments A-C (pages 4-40); this report provides information about the value added to the students, university, and state from the assignments, including more than \$12.1 million of funds obtained during or after the faculty member's professional development assignment; there are a number of grant proposals that have the potential for funding but they are still pending. The objectives of the professional development assignments were met. This report addresses the Board of Regents Strategic Plan priority for “educational excellence and impact” as well as “economic development and vitality.”

**Background:**

- ◇ Review process. A rigorous review process was conducted for each proposed professional development assignment. Faculty recipients were selected on the basis of peer review and recommendation at the department and college levels at each university and final approval by the provost. One of the criteria considered is the impact of the proposed professional development assignment to the university, students, and the state.
- ◇ Professional development assignment activities. Faculty members engaged in a variety of productive activities during their professional development assignments in FY 2014. For example, faculty members had the opportunity to engage in intensive research, write scholarly books and articles, create new works of art and composition, present papers, work in industry, develop modeling systems, and develop grant proposals, software, course materials, and multimedia resources for their disciplines.

Professional Development Assignments enrich the educational environment of the universities and are considered essential to the academic vitality of the universities. Educational excellence results from a vital faculty which actively pursues new developments in knowledge and teaching. Additional significant benefits obtained by the faculty members are the collaborations that occur during the professional development assignment; they frequently lead to continued mutual efforts and in some cases open doors for external grant funding.

- ◇ Length of assignments. Professional development assignments were either one or two semesters in length. For professional development assignments that were two semesters in length, compensation was limited to the amount of compensation a faculty member would receive during a semester-long assignment.

- ◇ Obligation to institution. Iowa Code §262.9(13) requires that a faculty member return to the institution for twice the length of time of their professional development assignment or to repay the costs associated with the professional development assignment if the faculty member does not return to the institution. Following their professional development assignments, faculty members are responsible for reporting the results of their assignments as specified by Board Policy §4.09E and their institutional guidelines.
- ◇ Number of professional development assignments. There were 125 professional development assignments approved by the Board of Regents for FY 2014; 117 reports are included in the Attachments.
  - ☑ University of Iowa. There were 65 professional development assignments approved for FY 2014; however, one faculty member deferred the PDAs to a later time, two faculty members declined their PDA, one faculty member left the university and did not take the PDA, two faculty members spread their award over spring and fall and their reports will be included with the 2014-2015 reports, two faculty members who had deferred their assignment from previous years undertook their PDAs during 2013-2014, and one faculty member who spread her award over spring and fall of the previous year is included in the FY 2014 report. The total number of reports included for SUI is 64.
  - ☑ Iowa State University. There were 45 professional development assignments approved for FY 2014. There were seven professional development assignments cancelled. The total number of reports included for ISU is 38.
  - ☑ University of Northern Iowa. There were 15 professional development assignments approved for FY 2014. The total number of reports included for UNI is 15.
- ◇ Faculty replacement costs. Costs are minimized to the greatest extent possible by using a variety of strategies, including having colleagues cover courses, deferring non-required courses to a later time, and adjusting schedules of existing faculty members. Faculty members who are on professional development assignment for a full year receive only half their salary; the balance is used to offset replacement costs.
- ◇ Average length of service. The average length of service for the proposed professional development assignment recipients in FY 2014 was 14.8 years at SUI; 12.9 years at ISU; and 14.4 years at UNI.
- ◇ External funding obtained while on professional development assignment. A number of faculty members received external grant funding while on professional development assignment or subsequent to the PDA. In addition, many PDA recipients submitted grant proposals which are still pending.
  - ☑ At the University of Iowa, 17 faculty members received external funding either during their assignment or following the assignment. The total amount received was approximately \$8.2 million.
  - ☑ At Iowa State University, 12 faculty members received external funding either during their assignment or following the assignment. The total amount received was approximately \$3.75 million. An additional \$53.6 million in funding proposals was submitted.

- ☒ At the University of Northern, Iowa, two faculty members received external funding prior to their assignment, during their assignment, or following the assignment. The total amount received was \$153,000. An additional \$350,000 proposal was submitted.

UNIVERSITY OF IOWA

**AYATI, BRUCE, ASSOCIATE PROFESSOR, MATHEMATICS, 7 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Computational Modeling and Simulation in Orthopaedics and Multiple Myeloma

During the period of the Professional Development Assignment, Prof. Ayati and his students collaborated with colleagues in Carver College of Medicine on three projects: Modeling articular carriage lesion formation; modeling and simulating multiple myeloma induced bone disease; and modeling the effects of multiple myeloma on kidney function. The education of three graduate students, two with new projects, made a major contribution to education. In addition, Ayati and graduate student Xiayi Wang were students in the inaugural UIRF "Venture School" where significant strides were made towards the eventual commercialization of research and the creation of a startup venture. This will benefit the State of Iowa in the creation of new jobs and wealth in state. During the time of the PDA, Prof. Ayati and his research group were able to make significant strides in research and software development, including one paper accepted pending minor revision and two others near completion. Prof. Ayati applied for two grants during this time.

**BAXTER, LESLIE, PROFESSOR, COMMUNICATION STUDIES, 20 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Remaking "Family" Communicatively

During the PDA, Prof. Baxter completed her proposed book on the role of communication in legitimating a variety of post-nuclear family forms. In the absence of blood, law, and co-residence, the factors that undergird the idealized nuclear family form, the majority of U.S. families must rely exclusively on their communication practices to gain legitimacy as a family. The substance of the book will serve as the basis for a new advanced course to be taught in the fall 2014 semester to advanced undergraduate and beginning graduate students. The book will be useful to fellow scholars of the family, whose work is still heavily biased toward understanding of the nuclear family. The book will be useful to family policy makers, whose definition of the family favors the nuclear family. In addition to completing her book, Prof. Baxter moved three scholarly essays toward publication. She gave two keynote addresses at communication conferences, one at the University of Oklahoma and the other at Louisiana State University.

**BERRY, STEPHEN J., ASSOCIATE PROFESSOR, JOURNALISM & MASS COMMUNICATION, 11 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Harry Scott Ashmore: The Making of a White Liberal Editor in the South's Jim Crow Era

In this Professional Development Assignment, Prof. Berry completed Phase I of a 3-phase book project about Harry Ashmore, a Pulitzer Prize winning executive editor of the Arkansas Gazette, and his influence in civil rights history, thereby providing new knowledge of the Civil Rights Movement and the 1957-59 Little Rock crisis, while refining understanding of southern liberal journalists. In this phase, he obtained a grant for the remaining research and did secondary and primary source research. He will be the first to write a book about Ashmore, a southern liberal journalist whose racial attitudes were exposed to the race relations milieu that combat experience in World War II imposed upon him and other southern war veterans. It provided material for a new course scheduled for fall 2014 on press coverage of the civil rights movement. It will provide lecture and case-study material on investigative and daily news reporting and editorial writing. It benefited the university and Iowa by adding to the knowledge and reputation of a Prof. Berry and his department, thereby increasing his effectiveness in teaching Iowa students and enhancing the university's national standing.

**BOLTON, LINDA, ASSOCIATE PROFESSOR, ENGLISH, 20 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Art, Ethics and Justice

Prof. Bolton completed the majority of the writing and revision of the Kollwitz chapter of her book manuscript, "Art, Ethics and Justice," as projected. She will be able to finish the entire chapter once she is able to see the Kollwitz prints in the MoMA archives. Prof. Bolton's research into the conceptualization of "Art" in its relationship to issues of ethics led her into an unexpected exploration of utilizing poetry as an art of healing. Working in conjunction with a neuroscientist and yoga teacher, Prof. Bolton began "field work" with two severely disabled persons, testing the value of poetry as a therapeutic tool for those suffering with incurable conditions of disability. Her practice in this context led to the conceptualization of a new chapter that examines the practice of yoga and poetry as "arts of healing." Prof. Bolton's research in this area resulted in the formulation of a new undergraduate course, "Writing Trauma, Imagining Hope," offered in Fall 2014. This course incorporates her collaboration with a neuroscientist/yoga teacher that will extend beyond the classroom.

**BRANCH, LORI A., ASSOCIATE PROFESSOR, ENGLISH, 14 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* "Return to the Person, Or How We Might Become Post-Posthuman"

During her PDA, Prof. Branch wrote a chapter for her book entitled 'Postsecular Reason'; this chapter will be advance-published in the 'Routledge Companion to Religion and Literature' (2015). Her work on postsecular studies impacts this emerging field internationally and enhances UI's graduate and undergraduate curriculum with cutting-edge courses taught in few other institutions; by extension it benefits her department and the reputation and vitality of the UI and the economy of Iowa. During the award period, Prof. Branch also co-authored a 68-page NEH Summer Seminar proposal, which was rejected with very high marks, and which the co-authors will revise and resubmit in 2015. She reviewed and accepted two book-length manuscripts for the academic series she edits for Ohio State UP, "Literature, Religion, and Postsecular Studies." She also delivered three lectures nationally and wrote two book reviews during the period of the PDA award.

**BUDD, ANN F., PROFESSOR, GEOSCIENCE, 31 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Early Evolution of Caribbean Reef Corals

Coral reefs are the most diverse of marine ecosystems and are threatened by climate change, ocean acidification, and anthropogenic disturbance. They are constructed by 18 families and >800 species of scleractinian coral. Molecular analyses show that 13 families are not valid groups, and that gaps exist in knowledge of their evolution. Ann Budd traced the evolution of two coral families using morphological data collected on fossil specimens in museums. She examined >140 Mediterranean and >100 Caribbean specimens and added the observations to an existing dataset consisting of 62 living species. The data were analyzed using standard software for reconstructing evolutionary trees. The results indicated that the Mediterranean fossils were cosmopolitan and closely related to modern Indo-Pacific corals; however, Caribbean corals were unique and originated during an evolutionary radiation associated with climatic warming ~50 million years ago. Prof. Budd will publish the results in a taxonomic monograph and disseminate them via an online biodiversity database. She is training students in biological systematics and biodiversity informatics, and developed activities for two UI courses.

**BURTON, STEVEN J., PROFESSOR, LAW, 37 YEARS OF SERVICE, FALL SEMESTER**

*Title:* "Chief Justice Roberts' Peculiar Theory of Constitutional Precedent and Overruling"

Professor Burton completed the research and writing of a law journal article on precedent and overruling in constitutional adjudication before the United States Supreme Court. It will be published in the June 2014 issue of the Cardozo Law Review as "The Conflict Between Stare Decisis and Overruling in Constitutional Adjudication". It will benefit the State of Iowa because it may inform overruling decisions by the Iowa Supreme Court. It will benefit society generally because little in the law is more important or difficult to understand than the evolution of constitutional law.

**CAMERON, JOHN, PROFESSOR, THEATRE ARTS, 17 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Pilot Script and Series Development

Prof. Cameron completed writing three television pilots during his PDA in the spring of 2014. The first, 1460 Days, with partner Claire Cowperthwaite, Script Supervisor of 30 Rock, was completed in early 2014. The project was abandoned due to artistic differences. The second script, The Big House, also written with Cowperthwaite, was completed in 2014 after four rewrites. An early version was pitched to 3Arts Entertainment in 2013 and was declined. The final rewrite was pitched to SONY Television Pictures in spring 2014 at the Los Angeles Studios. It was also declined. The partnership was ended in spring 2014. A third pilot, Coal Wars, was written by Cameron as a solo project in 2014. At this writing the script is under consideration by SONY Television Pictures and Endemol Studios/Assembly Entertainment. The professional contacts and experience gained in this process have directly informed Prof. Cameron's work in his undergraduate and graduate 'Acting for the Camera' classes and his 'Graduate Career Preparation' course. The work has expanded the Theatre Arts Department's industry contacts and enhanced the placement network for our students.

**CARRICA, PABLO, ASSOCIATE PROFESSOR, MECHANICAL AND INDUSTRIAL ENGINEERING, 7 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Development of New Surface Contact Capabilities for Ship Hydrodynamics

During the PDA, Prof. Carrica focused in the development of immersed boundary capabilities for the computational fluid dynamics (CFD) codes in use in his research group. Prof. Carrica also wrote proposals to Iowa Energy Center (IEC), Office of Naval Research (ONR) and National Science Foundation (NSF), and research papers. Outcomes: 1) Significant progress was made implementing immersed boundary, as described in the narrative. 2) The proposal to IEC (\$88,840) and ONR (\$228,534) were funded. The proposal to NSF (\$990,355, A. Kruger co-PI) is under evaluation. 3) Two research papers were submitted. Teaching/students: students in 58:258 Computational Ship Hydrodynamics will benefit with expanded content on overset technology. Benefits: the PDA benefits the state of Iowa by improving its research capabilities and bringing grant funds and improving chances of future funding. Society benefits by better flow simulation tools for ships or wind turbines, ultimately improving national security and energy independence.

**CORREIA, MONICA C.D.G., ASSOCIATE PROFESSOR, ART AND ART HISTORY,  
10 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Product Design and Commercialization

During her PDA, Prof. Correia exhibited her work at the EDIT DesignJunction show at Palazzo Morando in the Brera District of Milan, Italy, the heart of the design world. World media examined her work and highlighted it in websites and blogs. Prestigious curated websites like [www.mocoloco.com](http://www.mocoloco.com) and [www.contemporist.com](http://www.contemporist.com) published her work. At the UI, she restructured the 3D Design program, reorganized the courses for content and sequence and created a new class based on the experience gained with the PDA and the Milan show. For example, the 'Design for Production and Business' course will teach students how to prepare work for industrial production and commercialization. In Milan, she met companies interested in commercializing her lamps. She is currently preparing her work to be sold in stores. She also met designers from around the world whom she is proposing to have visit the UI as guest speakers. One company based in Hong Kong and London offered internships for her students. She was invited by the DesignJunction curatorial team to participate in this year's event in London. She will display her work at the London exhibition in September.

**CREEKMUR, COREY, ASSOCIATE PROFESSOR, ENGLISH, 17 YEARS OF  
SERVICE, SPRING SEMESTER**

*Title:* Experiments with Truth: The Indian Colonial Historical Film

During his Spring 2014 PDA, Prof. Creekmur conducted substantial research and writing on his book project 'Experiments with Truth: The Indian Colonial Historical Film,' to be submitted for publication in early 2015. Portions of this work were also presented in a public forum in March 2014. The study analyzes the complex and controversial issues involved in independent India's representation of its own colonial history in a popular narrative form. More broadly, the work examines the representation of historical events and figures in mainstream cinema. This project should enhance Prof. Creekmur's scholarly endeavors and inform his teaching as a specialist in film studies and South Asian culture, an expertise that serves the UI's internationalization efforts as well as graduate students and undergraduates drawn to Iowa as a site for the study of international cinema and popular culture.

**CURTIUS, ANNY DOMINIQUE, ASSOCIATE PROFESSOR, FRENCH AND  
ITALIAN, 11 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Unveiling the Camouflage: Suzanne Césaire's Caribbean Ecopoetics

During her PDA, Prof. Curtius was a Fellow in residence at the Obermann Center for Advanced Studies. She made substantial progress on her book manuscript "Unveiling the Camouflage: Suzanne Césaire's Caribbean Ecopoetics" that she plans to submit to a publisher in Spring 2015. Her book project on Martinican writer, Suzanne Césaire (1915-1966) expands the field of Ecocriticism and Women studies, and contends that Césaire's pan-Caribbean ecological thought lays down the markers of a Black Atlantic ecocriticism. Prof. Curtius also consulted archives on Césaire in three librairies in Paris. While in Paris, she also collaborated with a French colleague to organize a conference on Césaire and Caribbean women's critical theory in 2016. Prof. Curtius' research on Césaire will be a key component of her graduate seminar 'Francophone Women Theorists Raise their Voice,' which she will teach in Spring 2015. She also incorporated her findings into an undergraduate course, 'French Speaking-Cultures,' also offered in Spring 2015. Her research contributes to UI's commitment to diversity, and educates the Iowa community about the relational dynamic between the Caribbean and the US.

**CURTU, RODICA, ASSOCIATE PROFESSOR, MATHEMATICS, 7 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Understanding the Neural Mechanisms of Perceptual Rivalry Induced by Auditory Stimuli  
Prof. Curtu used her PDA to expand her research program in applied mathematics by developing a new, interdisciplinary collaboration with the Human Brain Research Laboratory at the University of Iowa. The project focused on the data analysis of human auditory cortical recordings during streaming, and on its integration with numerical simulations and mathematical modeling. The results will potentially provide novel insights into the ways the brain processes sensory information. The work will also become part of the curricula of a graduate course in computational neuroscience and an undergraduate course for calculus for the biological sciences. In parallel, Prof. Curtu worked on a research project at IIHR Hydrosience & Engineering, to develop a model for the prediction of floods. During the PDA, she completed one manuscript and two are in advanced stages of preparation.

**DUARTE, ARMANDO S., PROFESSOR, DANCE, 21 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Dance, Samba and Carnival, the Choreography of the Brazilian Schools of Samba Parades

During the PDA period, Prof. Duarte completed extensive on-site research in Brazil for the writing of a book titled 'Dance, Samba and Carnival, the Choreography of the Brazilian Schools of Samba Parades.' The collection of oral stories and compilation of documentation related to the culture of the body, origins of samba, history of carnival in Brazil, and specifically the popular dances performed during carnival parades were the main core of his research. It began as an examination of the African-Brazilian Diaspora and further research led to an investigation of samba dance forms and carnival elements from the early 20th century to the present. The central claim of this book focuses on presenting and describing these elements as well as investigating aspects of performance presented in these popular dances. He secured further information to foster his teaching and current research at UI and provided a solid theoretic foundation for future publications. His research will benefit students currently enrolled in his classes and his book will provide an original view of a worldwide, famous popular cultural expression.

**EBERL, DANIEL F., PROFESSOR, BIOLOGY, 16 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Functional Diversity in the Drosophila Johnston's Organ

During this PDA, Professor Eberl conducted research on how hearing works in the fruit fly Drosophila. The genetic analysis of Drosophila hearing is an important model system to understand hearing and mechanosensation at the molecular level. Specifically, Professor Eberl designed and conducted experiments to optimize conditions for identifying all transcripts expressed in particular cell types within the auditory organ. These novel protocols were developed in collaboration with the Carver Center for Genomics in the Biology Department, and the Iowa Center for Molecular Auditory Neuroscience, and should be applicable to other researchers interested in similar questions. Professor Eberl made significant progress in publishing several papers, including one that identified Ubr3 as a new candidate gene for human Usher's Syndrome. The research findings helped Professor Eberl update teaching materials for an undergraduate course, Animal Behavior, including a major revision of the laboratory manual, and incorporating many video clips illustrating principles of animal behavior, as well as designing interactive classroom activities to improve the level of instruction for Iowa students.



**FAGAN, SARAH, PROFESSOR, GERMAN, 20 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* German Phonetics and Phonology: Theory and Practice

During her PDA, Prof. Fagan completed the first draft of the final four chapters of her book on the sounds of German (under contract with Yale University Press): 'German Phonetics and Phonology: Theory and Practice' (co-author Mary Grantham O'Brien, University of Calgary). The textbook and accompanying website with high-quality sound files address the need for materials to support explicit instruction in the pronunciation of German at North American universities. They will serve as instructional materials for a recently-developed course for undergraduates at the University of Iowa (GRMN:3855 The Sounds of German) designed to provide students with an understanding of the sounds and sound system of German and the opportunity to put this knowledge into practice to make their speech more comprehensible and more native-like.

**FANG, HAO, ASSOCIATE PROFESSOR, MATHEMATICS, 9 YEARS OF SERVICE, HALF TIME FOR ONE YEAR**

*Title:* Analytic Torsion and its Applications in Geometry

Prof. Fang combined the University of Iowa PDA with a Simons Fellowship award to take a full-year leave. During this period, he finished several research projects that were initiated earlier and he has published the following papers: 1. Fang, Chang, and Graham: A note on Renormalized Volume Functionals, *Differential Geometry and its Applications* 33 (2014), suppl., 246–258. 2. Fang, Lai, Song, and Weinkove, The J-flow on Kaehler Surfaces: a Boundary Case, *Analysis and PDE*, 7 (2014), no. 1, 215–226. 3. Fang and Lai, Convergence of General Inverse Flow on Kähler Manifolds, *Trans. Amer. Math. Soc.* 365 (2013), no. 12, 6543–6567. Paper 1 addresses an important concept in geometry and physics. Papers 2 and 3 focus on Kahler geometry and some of its technical aspects. In addition, Prof. Fang has made significant progress on a new project that involves that proof of an index theorem related to singularity theory and defined torsion invariants. This is an exciting development linking two important branches of mathematics and will provide insight for new discoveries. Several publications are being prepared.

**FINAMORE, JOHN F., PROFESSOR, CLASSICS, 31 YEARS OF SERVICE, HALF TIME FOR ONE YEAR**

*Title:* An Edition with Translation and Commentary of Hermias of Alexandria's Commentary on the Phaedrus of Plato

Prof. Finamore conducted research on the 6th-Century A.D. philosopher Hermias' commentary to Plato's Phaedrus. He received a grant from The Loeb Classical Library Foundation. Research was conducted at the American School of Classical Studies in Athens in October and November 2013; at the American Academy in Rome from February to April 2014; and at the University of Iowa. He completed the research for two scholarly articles (both of which will be published in two separate anthologies) and also is editing an anthology of papers on the philosophy of Hermias. A version of one paper was presented at the 2014 annual conference of The International Society for Neoplatonic Studies in Lisbon, Portugal in June. A version of the other will be presented at a conference at the University of California at Berkeley in September 2014. Prof. Finamore will use the results of his research when he teaches CLSG:6012 "Classical Greece: Plato" in Spring 2015. Parts of his research have also aided in his discussion with two of his dissertation students whose topics concern Platonism. His research will also be valuable for his undergraduate courses on ancient philosophy.

**FOSTER, PATRICIA A., PROFESSOR, ENGLISH, 20 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Between Bodies: Anatomy of a Marriage

Patricia Foster's book-project examines how illness creates a new map of connection and intimacy within marriage and partnership. During the PDA leave, she wrote six new chapters, revised and published three essays/chapters, published a previously written chapter, and gave a reading from the manuscript at the Associated Writing Programs Conference in Seattle in February, 2014. The project expands the field of illness/disability studies as well as the genre of the personal essay and will contribute to how disease affects relationships. The project will result in publication of a book of essays and will provide material for Foster's undergraduate course (Spring 2015), Advanced Nonfiction.

**GALVIN, JAMES A., PROFESSOR, CREATIVE WRITING, 30 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Finish Poetry Book Number Eight

Professor Galvin used his Professional Development Assignment to finish his tenth book, which is his eighth book of poems. He spent the first part of the leave in Wyoming, where he wrote ten poems about the Medicine Bow Mountains' landscape, weather, and ecosystem. He spent the second part of the leave writing five lyric poems that were needed to complete the manuscript. The new book has been sent to his publisher. The hope is for a major impact on American poetry, a change in the way people understand the grandeur and fragility of the American West, and to further the vision of the Iowa Writers' Workshop.

**GFELLER, KATE E., PROFESSOR, MUSIC, 29 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Enhancing Music Perception and Involvement of Persons with Hearing Loss Through Research-Based Clinical and Educational Practices

Ten percent of the U.S. population has significant hearing impairments, which negatively impact vocational, social, and emotional well-being. Fortunately, negative effects can be reduced through therapeutic and educational methods that optimize the individual's use of their hearing devices (e.g., hearing aids, cochlear implants). Prof. Gfeller used her PDA to complete the research and review of literature required to write 5 chapters for a textbook, 'Music Therapy and Education Approaches for Persons who are Deaf and Hard of Hearing,' co-authored with Dr. A.A. Darrow of Florida State University. This text is a culmination of Prof. Gfeller's 35 years of research and clinical experiences on this topic. The manuscript will be submitted to the Executive Director of the American Music Therapy Association, who expressed interest in its publication. This text will be used in graduate and undergraduate courses in music therapy at UI and by college instructors and clinicians across the US. During the PDA, Prof. Gfeller also presented 11 research presentations, wrote or contributed to 5 additional articles or book chapters, and developed a music training battery for persons with hearing loss

**GLASGOW, ROBERT O., PROFESSOR, ART AND ART HISTORY, 29 YEARS OF SERVICE, FALL SEMESTER**

*Title:* The Aerials Series

Prof. Glasgow expanded a new series of works entitled Aerials, involving mixed media printmaking, drawing and painting processes. Nine print works and five paintings were completed with many more in progress. The Aerials Series resides in the realm of cultural fiction and continues Prof. Glasgow's interest in interpreting complex concepts using abstract visual images and symbols. In the context of his work, 'aerials' refers to the spatial ambiguities of viewing panoramic expanses from above the earth's surface, as well as the objective

distancing of one's critical viewpoint from normal cultural, geo-political and historical biases. From such a perspective, traces of sociopolitical and culturally based conflicts and commonalities may be discovered. The creative process involved in such discovery brings experience to the process of guiding graduate and undergraduate student research via visual abstraction. Through teaching and local, regional and national exhibitions, Prof. Glasgow's works will also invite consideration of globalism, ethnic dislocations and other culturally sensitive themes.

**GORDON, JEAN K., ASSOCIATE PROFESSOR, COMMUNICATION SCIENCES & DISORDERS, 13 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Prevention and Promotion of Language Production

Prof. Gordon received a PDA in Spring 2014. During this time, she completed analyses of data previously collected for three projects exploring different aspects of language change in aging and age-related disorders. Two of these projects were carried out by Prof. Gordon and the students in her lab; the third was a collaborative project with a fellow researcher in the College of Nursing, supported by an Obermann Interdisciplinary Research Grant. The goal of these projects is to advance our understanding of how aging contributes to both growth and decline in language abilities, and how such changes influence perceptions of the speaker. These analyses have resulted in the completion of two papers, the writing of three new papers, five presentations at national and international conferences and three more at local venues. The wide dissemination of Prof. Gordon's findings will increase the likelihood of her obtaining external funding in the upcoming year for work that follows from these studies. The increased understanding of age-related changes also supports development of a new undergraduate course being taught by Prof. Gordon this fall: Basic 'Aspects of Aging.'

**GOREE, JOHN A., PROFESSOR, PHYSICS AND ASTRONOMY, 29 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Plasma Physics Research

Prof. Goree focused his PDA on plasma physics research. Plasma is an ionized gas; it is at a higher temperature than states of matter such as solids, liquids and gases. During this PDA, Prof. Goree supervised experiments performed by UI graduate students and collaborated with scientists from other universities. He participated in planning a future experiment for the International Space Station. During this assignment, Prof. Goree finished six papers that were submitted to scientific journals, he started writing three more papers, and he presented his research to the scientific community by giving an invited talk and ten contributed talks at scientific conferences as well as two colloquia at universities. This assignment bolstered Prof. Goree's ability to maintain his success in obtaining competitive research grants from federal agencies. This assignment also refreshed Prof. Goree's expertise in subject matter that he teaches in undergraduate and graduate courses.

**GRASSIAN, VICKI H., PROFESSOR, CHEMISTRY, 25 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Molecular Processes and Global Impacts of Small Particles

Prof. Grassian conducted research focused on understanding molecular processes of small particles. Small particles, defined as particles from 1 nanometer to 10 micrometers in size, are often difficult to characterize yet without understanding the composition and properties of small particles in various milieu (air, water, soil and in vivo), there will be limited understanding of their applications as well as impacts. These detailed studies are needed in order to better understand the impacts of small particles in the environment and human health. In the Grassian group, undergraduate and graduate student researchers have focused on better understanding

the atmospheric chemistry and climate impacts of particulate matter in air and the environment and health impacts of nanoparticles. The research has implications for the people of the State of Iowa and society as a whole. These studies have led to several publications, funded grant projects and new collaborations. These studies also contribute to the content of educational activities Prof. Grassian is engaged in at UI. These activities include classroom teaching across the curriculum and seminar courses.

**GREEN, STEVEN H., PROFESSOR, BIOLOGY, 27 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Genomics Approach to Understanding Neural Consequences of Deafness

Prof. Green was unable to travel to the University of Washington because of administrative duties at UI. Therefore, the original goal of the PDA - to assess the molecular basis of auditory neuron degeneration after deafening in the mouse, particularly for possible involvement of an immune response - could not be accomplished. However, Prof. Green was able to investigate a related topic and showed that immunosuppression reduces degeneration of auditory neurons after deafening in the rat. Prof. Green also published a paper on other molecular changes in the cochlea after deafening. Although the rat does not have the same advantages for genetic studies as does the mouse, the results are nevertheless valuable for treatment of deafness, particularly for recipients of cochlear implants. Prof. Green is also preparing papers on noise damage to the cochlea including a study supporting the use of a specific type of compound as a novel means of preventing noise damage. If the experiments continue to be successful, Prof. Green will apply for a patent. Prof. Green also developed a new graduate neuroscience course and has started teaching it this fall semester.

**HEIMER, KAREN, PROFESSOR, SOCIOLOGY, 23 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Women and Violent Victimization

Prof. Heimer worked on six research projects during her PDA: 1) a set of papers based on a national study of violent victimization since 1973, particularly focused on violence against women and minorities; 2) a study of changes in the gender gap in imprisonment over time across the 50 states; 3) a study of changes in women's arrest rates over time in the 100 largest US cities; 4) a study of abstinence pledging and health outcomes among youth; 5) an analysis of peer influence on girls' and boys' juvenile delinquency, and 6) a paper on perceptions of mothering by women offenders. Significant progress was made on all projects and papers either have been submitted for peer review already or will be submitted for review in the coming months.

**HERR, CHERYL T., PROFESSOR, ENGLISH, 29 YEARS OF SERVICE, HALF TIME FOR ONE YEAR**

*Title:* Joyce and Heidegger: Tools, Fables, Rivers

Prof. Herr wrote a book on Irish author James Joyce (1882-1941) and German philosopher Martin Heidegger (1889-1976) showing that their work shares previously overlooked premises and conclusions. This symmetry grows from the writers' Roman Catholic education and the grounding in the history of philosophy, especially the thought of Aristotle and Aquinas, characteristic of that education. Joyce and Heidegger both write about everyday practices, make rhetorical use of fables, and meditate on river ecologies to get at the nature of human being and of Being itself. Studying Joyce and Heidegger together - writing a story that has not yet been told - contributes a new and unanticipated chapter to European intellectual history. Work on this project will continue to inform Prof. Herr's teaching of courses on Joyce at all levels & will continue to encourage graduate students from outside English to enroll in those courses. Prof. Herr also completed a book about the impact of World War II on British popular music.

**HOENICKE-MOORE, MICHAELA, ASSOCIATE PROFESSOR, HISTORY, 7 YEARS OF SERVICE, FALL SEMESTER**

*Title:* The Varieties of American Patriotism: U.S. Foreign Policy Debates since World War Two  
During her PDA, Prof. Hoenicke-Moore began research for a new book-length study on American foreign policy debates in the 20th century, completing one essay and presenting her findings at two conferences. She combined these travels with archival research and developed two major grant proposals for eight national and international submissions. Her conference and research travels have also led to new contacts with American and European colleagues and institutions from which her students benefit in their study abroad, graduate school, internship, and job applications. She used a Curriculum Development Award to prepare lectures for a new course on International Politics: The History of the Present, part of the core curriculum in the new International Relations Major and advised her students, two of whom completed their PhD, MA and Honors theses during this time. This research-intensive fall semester has yielded much new material (from local archival material on World War Two to the recent debate about intervention in Syria) which Prof. Hoenicke-Moore is using in her current classes as well as for her scholarly publications.

**HOURLCADE, JUAN PABLO, ASSOCIATE PROFESSOR, COMPUTER SCIENCE, 9 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Book on Designing Interactive Technologies for Children  
Through his Spring 2014 PDA, Prof. Juan Pablo Hourcade completed a first draft of a book titled 'Child-Computer Interaction: A Research Primer.' The book is the first to provide a comprehensive overview of the field of child-computer interaction. This field concerns the study of the design, evaluation, and implementation of interactive computer systems for children. The current draft of the book has twelve chapters consisting of more than 60,000 words, with references to more than 600 publications. Topics include child development, safety issues, usability, design principles and heuristics, design and evaluation methods, and an overview of research in the field. Prof. Hourcade wrote the book while a Fellow-in-Residence at the Obermann Center. Hourcade plans to self-publish the book in order to make it available at no cost. He also plans to use it to teach a new course on the topic. In terms of broader impacts, the book should be a valuable resource for anyone interested in conducting research in child-computer interaction, as well as for practitioners working on developing interactive computer systems for children, including educational technologies.

**KINSEY, JONI L., PROFESSOR, ART AND ART HISTORY, 23 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Expansive Visions: Landscape Lessons in the Transcontinental Art of J.M.W. Turner and Thomas Moran

Prof. Kinsey spent a large portion of her PDA in the fall of 2013 doing preliminary research for a book entitled "Expansive Visions: Landscape Lessons in the Transcontinental Art of J.M.W. Turner and Thomas Moran" for which she is doing field work in Britain as a Fulbright Scholar during the spring semester, 2014. Kinsey gathered hundreds of relevant images by both artists through various means, including an important research trip to the Gilcrease Museum in Tulsa, which is the largest repository of Moran's work. Other outcomes included: 1) consultation for a major exhibition at the Denver Art Museum that included the issue of a revised edition of Kinsey's 2006 Moran book; 2) co-curating a major exhibition at the UI Museum of Art (New Forms...); 3) lectures at the Dubuque Art Museum (on Moran) and UNI (on an exhibition of 1880s etchings Kinsey's students curated); 4) heading a panel on Midwestern women's art at Bradley Univ.; and 5) writing a book review. She also redesigned and enhanced her course on American landscape. These outcomes have benefits to UI students, the state, and society.

**KOMISARUK, CATHERINE, ASSOCIATE PROFESSOR, HISTORY, 8 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Gender and Native Rebellions in New Spain

Prof. Komisaruk carried out archival research in Mexico for her book on native rebellions. Focusing on colonial-era Mexico and Central America, the book project seeks to understand the remarkably widespread phenomenon of indigenous women's participation in armed uprisings. During the PDA semester, Prof. Komisaruk worked with collections of judicial, administrative, and military records housed in Mexico's national archives (the Archivo General de la Nación) in Mexico City. Her research in Mexico uncovered records of testimony by native rebels as well as officers of both native and colonial states. She also found reports by clergymen and physicians consulted by the colonial state during public health crises, which often resulted in popular uprisings. Outcomes of the project include Prof. Komisaruk's long-term book project, which she continues to develop, as well as a journal article in progress that she expects to submit for review this winter. Further, she will incorporate some of her findings on epidemics, marriage, and tributes into several courses that she regularly teaches: Introduction to the History Major; History of Mexico; and Colonial Latin America.

**LEDDY, JOHNA, ASSOCIATE PROFESSOR, CHEMISTRY, 23 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Thin Layer Sonoelectrochemistry

Prof. Leddy advanced models of electron transfer kinetics and their applications to energy technologies. Models for electron transfer kinetics were furthered to include properties of catalysts and metal electrodes; this development is significant as existing theory excludes detailed materials properties. Her research group implemented these fundamentals in technologies that include electrochemical energy systems. Two technologies, funded by NSF and Army, are of note for Iowa: ammonia generation at algae modified electrodes and thin layer sonoelectrochemistry for a direct ethanol fuel cell. Algae on electrodes may produce ammonia fertilizer on farms at much lower cost (funded initially by Iowa Energy Center). Ethanol fuel cells are not viable because alcohol oxidation rates are too slow. Ultrasound in thin layer electrochemical cells enhances rates and may enable low temperature ethanol fuel cells. Fundamentals of kinetics and design of energy technologies figure prominently in Prof. Leddy's teaching. Improved energy and catalyst efficiency also have broad societal impacts.

**LILLIOS, KATINA, ASSOCIATE PROFESSOR, ANTHROPOLOGY, 11 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Publication of the Archaeological Excavations at the Neolithic-Bronze Age Burial of Bolores, Portugal

During her recent PDA, Prof. Katina Lillios completed analyses of the findings from the archaeological site of Bolores, Portugal and prepared four articles on this research, which has been funded by a National Science Foundation grant. Significant progress was made on the final monograph for the site, which will be completed in the winter of 2014. Prof. Lillios also carried out fieldwork in Portugal, gave presentations on the Bolores excavations in Portugal, Spain, and the U.S., and wrote a book proposal for a volume on the Archaeology of the Iberian Peninsula (submitted to Cambridge University Press). These activities increase the international profile of the University of Iowa and enhance the classes that Prof. Lillios teaches, including Archaeology of the Iberian Peninsula and Anthropology of Death.

**LINDERMAN, MARC A., ASSOCIATE PROFESSOR, GEOGRAPHICAL AND SUSTAINABILITY SCIENCES, 9 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Hyperspectral Imaging of State-Wide Bioenergy Systems

As part of the PDA, Prof. Linderman developed a state-wide program to integrate NSF EPSCoR plot-level bioenergy research with state-wide remote sensing analyses through newly available airborne hyperspectral sensor capabilities. This PDA provided the opportunity to further develop geoprocessing analyses, finalize first year results and publications, and extend these analyses to state-wide collaborative proposals on regional parameterization and validation of wide-swath biophysical satellite products. Goals for each objective include documentation of calibration and validation of the geolocation processing chain. Integrating ongoing work on phenology and hyperspectral measurements, research on fine resolution classification algorithms of plant functional groups including species-specific vegetation types, particularly problematic invasive species, was completed. Ecological monitoring is being integrated with flood frequency and duration estimates to examine proximate drivers of the distribution of invasive species. Initial plot-level analyses of canopy light interception will be conducted in conjunction with EPSCoR affiliated faculty at UNI and ISU.

**MCMURRAY, BOB, ASSOCIATE PROFESSOR, PSYCHOLOGY, 10 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Human Language: Uncovering Core Principles in an Interdisciplinary Framework

Prof. McMurray completed a number of projects during his PDA related to how people process and use language. He spent a month at Oxford University studying with scholars who research reading (and children who struggle to read). During this time, he developed new techniques, new skills, and a better understanding of the problem. When he returned to UI, he collaborated with a private sector firm, Foundations in Learning, Inc., to submit an SBIR grant to the Institute for Education Science to develop a new assessment of reading in struggling middle school students. It was funded this fall, and the team will begin the process of developing and testing the new tool. Prof. McMurray was also able to enhance his work on the neuroscience of speech and language processing, submitting his first paper using this new technique and laying the groundwork for two more. This was enhanced by the PDA as Prof. McMurray was able to travel to London to work with the neuroscientists there doing similar work. This work will be important in understanding the difficulties faced by hearing-impaired listeners. The work also translates to content in his undergraduate and graduate courses.

**MESSERLE, LOUIS, ASSOCIATE PROFESSOR, CHEMISTRY, 30 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Development of Inexpensive, Earth-Abundant Metal Oxide Catalysts for Solar-Powered Water Splitting and Storage of Renewable Energy

Professor Messerle performed hands-on research from January–August 2014 in the laboratory of Prof. Harry Gray of the California Institute of Technology's Department of Chemistry and Beckman Institute. Prof. Messerle synthesized new photoreductants based on tungsten compounds with antenna-like motifs and studied their photochemistry. The goal of NSF-funded Caltech research is to develop new photoreductants for converting solar energy into chemical fuels. A new collaboration between UI and Prof. Gray at Caltech has been established. New photoreductant candidate molecules will be synthesized by UI undergraduate and graduate students and sent to Caltech for laser spectroscopy. Several articles and possible new funding are expected from this collaboration. Prof. Messerle was inducted into Caltech's NSF-funded "Solar Army", a multi-institutional effort that provides him with access to solar energy

educational materials for classroom and outreach activities. A new solar-energy experiment is being introduced into this fall's Inorganic Synthesis Lab course 4:153 based on his Caltech research. His Caltech experiences will form the basis for a future First-Year Seminar course on solar fuels.

**MOORE, CATHLEEN M., PROFESSOR, PSYCHOLOGY, 7 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Visual Attention: From Behavior to Physiology (Book)

Prof. Moore spent portions of her PDA in Seattle to work with a colleague, Dr. John Palmer, at the University of Washington. Prof. Moore and Palmer are co-authoring a book entitled "Visual Attention: From the simple to the complex. " During her PDA, they completed plans for the book, three chapters, and generated the initial draft of a fourth chapter. In addition, they worked on five separate journal articles describing research that will be featured in the book. Two of these are in press, one is under review, and two are in draft form. Finally, Prof. Moore gave a set of invited talks while at University of Washington. An immediate beneficial impact of her PDA for the undergraduate students in her Spring course on Visual Perception is that they are using the completed chapters as a text for several weeks of the course. In addition, Prof. Moore used some time during her PDA to contribute her expertise on a case concerned with safety challenges that are caused by limitations of visual perception and attention during the inspection of overhead power lines.

**MOORE, MICHAEL E., ASSOCIATE PROFESSOR, HISTORY, 6 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Brief History of a Hatred: The Cadaver Trial of Pope Formosus

During his PDA, Prof. Moore worked in Main Library, researching a book on the trial of Pope Formosus. Upon his death, Formosus was exhumed, put on trial and deposed from the papacy. The subject required Moore to deepen his knowledge of the papacy and medieval law. The study helped him to gain notice among historians internationally. He was invited to participate in a research project based in Poland. The theme of Formosus was the subject of a successful external fellowship submission to a research center in Vienna. Prof. Moore's research during his PDA has improved his treatment of these topics in his current teaching schedule. He is better-positioned to teach the students of Iowa about these important aspects of medieval history. UI students are attracted to medieval history because of its inherent interest, and because it helps to explain the origins of our world. The subject of history teaches students how to analyze complex social and political problems; thus many leaders of industry, finance, and politics studied history in college. Moore encourages his students to think about their education as "learning for leadership," which he hopes will benefit the people of Iowa.

**\* ONWUACHI-WILLIG, ANGELA I., PROFESSOR, LAW, 8 YEARS OF SERVICE, FALL SEMESTER**

*Title:* According to Our Hearts: Lessons on Race, Family, and Law from Rhinelander V. Rhinelander

Prof. Onwuachi-Willig completed a draft of "Still Hazy After All These Years: The Lack of Empirical Evidence and Logic Supporting Mismatch," forthcoming in the Texas Law Review (with William Kidder, Assistant Executive Vice Chancellor, UC, Riverside). She also completed a chapter for a book collection "Controversies in Equal Protection" (Ashgate Publishing), which was co-authored with Dean Erwin Chemerinsky and Senior Associate Dean Mario Barnes, both of UC Irvine School of Law. She also has another forthcoming co-authored piece in the Berkeley Journal of Gender and Justice. Prof. Onwuachi-Willig published two opinion-editorials, one in the Chronicle of Higher Education and the other in the New York Times Room for



Debate. She wrote and presented two TedX talks and talks at the law schools of Harvard and Ohio State. She assisted her team with a grant proposal, which was successful, and which builds upon important bullying research within the state of Iowa that will be helpful to the state. She received training in quantitative methods and ethnographic research, which will assist her teaching. Quantitative methods will be especially useful in teaching Employment Discrimination courses.

**OSBORN, TRACY, ASSOCIATE PROFESSOR, POLITICAL SCIENCE, 7 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Creating Women's Public Policy under Long and Short-Term Political Party Changes  
Prof. Osborn used her PDA to engage in research for a new book on women state legislators. She traveled to the Arizona State Legislature (January-March) and the Arkansas State Legislature (April-August) to collect bill introduction and roll call vote data and interview legislators. The goal of Prof. Osborn's work is to collect information on four state legislatures – Washington, Arizona, Arkansas, and Iowa – in order to explain how political parties shape the ways in which women legislators represent women's public policy issues. Prof. Osborn completed data collection for Arizona and Arkansas; she will now turn to the Iowa case. She will use these data to complete a new book. This award will be helpful to Prof. Osborn's teaching at Iowa, as it gives her real-life examples to bring into her U.S. State Politics, Women and Politics, and U.S. Congress classes. This award will also be helpful to the state of Iowa. Since Prof. Osborn's book will address Iowa state legislative politics directly and compare these activities to other states, the work will inform our understanding of the legislative process in the state legislature.

**PESANTUBBEE, MICHELENE, ASSOCIATE PROFESSOR, RELIGIOUS STUDIES, 11 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Lakota Women and the Ghost Dance Movement  
Prof. Pesantubbee completed research for her book chapter on Lakota women and the ghost dance. In addition to written documents, she collected drawings and photos at the Stephen H. Hart Library and Research Center in Denver, CO, the Eli S. Ricker papers at Nebraska Historical Society, and the Smithsonian Institution. These images contribute significantly to her interpretation of Lakota dancers' intent in participating in the ghost dance. The research and analysis of Lakota women's involvement in the Lakota ghost dance provides new material and interpretations of the ghost dance that will be used for her courses on new religious movements and violence in America and Native American women and religious change. Prof. Pesantubbee worked on a new course on Native American Prophets and Prophecy and her research is incorporated into lectures on ghost dances. Religious movements are an important aspect of religious experience in Iowa and society. Prof. Pesantubbee's findings increase understanding of diversity in religious experience and the ways in which the study of women's experiences can enhance our knowledge of religious movements.

**QUINN, DANIEL M, PROFESSOR, CHEMISTRY, 32 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Resurrection of the Activity of Aged Acetylcholinesterase  
Organophosphorus (OP) chemical warfare agents are acutely toxic compounds that inhibit the enzyme acetylcholinesterase (AChE) in the central and peripheral nervous systems. The use of OP agents by terrorists is a significant national security concern. Inhibition occurs by phosphorylation of the active site serine nucleophile that is involved in catalysis. Administration of oxime antidotes leads to dephosphorylation of the phosphoryl-AChE adduct. However, the initial adduct undergoes a dealkylation reaction that leads to an aged adduct, for which there is no

known antidote. The research that was conducted during the PDA was designed to address this perplexing problem by the synthesis and evaluation of compounds that bind to and reactivate aged-AChE. AChE ligands were synthesized that have the potential to alkylate or acylate the aged-AChE adduct, which in turn would be susceptible to current antidotes. Benefits of the project are: 1) involvement of undergraduate and graduate research students; 2) results will be communicated in the undergraduate organic chemistry course that Professor Quinn teaches; 3) the implications for the security and well being of Iowa and the nation are manifest.

**RACEVSKIS, ROLAND, PROFESSOR, FRENCH AND ITALIAN, 16 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Self, Place, and Environment in Early Modern French Literature

During his PDA, Prof. Racevskis conducted research and drafted the first chapter of his new book project on "Self, Place, and Environment in Early Modern French Literature." The first chapter is entitled "Cyrano de Bergerac's Posthuman Moon: Comic Inversions and Animist Relations." He also revised and expanded the book's Introduction. In addition, he revised the book's second chapter, on the novelist Paul Scarron, which appeared as an article in the "French Review" in 2012. He is currently conducting research for the book's third chapter, on comic novelist Charles Sorel. The book project's topic of environmental literary study directly informs Racevskis's fall 2014 course "World, Nature, and Ecology in French Philosophy and Fiction." Several lesson plans have grown from the book's research and the syllabus has been revised. Racevskis will present work from the chapter on Cyrano in the University's European Studies Group this spring, thus benefiting the UI community directly; on the national level, he will present work from this book chapter at the annual meeting of the North American Society for Seventeenth-Century French Literature this May in Chapel Hill, NC.

**RAHMATALLA, SALAM F., ASSOCIATE PROFESSOR, CIVIL-ENVIRONMENTAL ENGINEERING, 7 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Development of a Human-Like Manikin to Investigate Human Response to Vibration During Transport

Professor Rahmatalla worked closely with researchers at the U.S. Army Research Lab (USAARL) in Fort Rucker, Alabama to achieve his PDA's goals on the development of a human-like manikin (human-surrogate) that simulates supine-human response during pre-hospital transportation. This included (i) conducting research and service, (ii) mentoring graduate and undergraduate students, (iii) visiting facilities at USAARL, (iv) attending multiple meetings at USAARL, New-Mexico, San Diego, and San Francisco, and (v) presenting work at national and international conferences. The outcomes of this work created stronger relationship with USAARL, with more potential funding opportunities, generated one journal and one conference paper for potential publication, and advanced Prof. Rahmatalla's students' work on human simulation in whole-body vibration. The final product of this work will allow designers to make safer transportation systems that generate minimal discomfort to injured military and civilian personnel in Iowa and across the nation during pre-hospital transportation.

**RAND, JACKI T., ASSOCIATE PROFESSOR, HISTORY, 16 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Violence, Native Women, and Gendered Sovereignty, 1960-2000

Prof. Rand conducted her PDA during the fall semester 2013 in order to further her work on "Re-Assessing Violence Against Native Women: Self-Determination and the Mississippi Choctaws, 1960-1980" as a fellow in residence at the Obermann Center for Advanced Studies. Using funds awarded to her through the fellowship, Prof. Rand completed archival research and immersed herself in numerous literatures related to her subject. Professor Rand wrote a grant

proposal for the NEH Summer Stipend Program, which the fellows writing group workshoped. The project has led to the conceptualization of a new undergraduate course that will focus on community and power in Native America today. The course will strengthen the American Indian Studies curriculum and certificate and benefit students. The course will benefit the state of Iowa specifically because it will allow for the incorporation of modern Meskwaki tribal history which includes a 40-year period of a state-tribal trust relationship as explored by one of Prof. Rand's graduate students for a Ph.D. dissertation.

**RAPSON, JOHN, PROFESSOR, MUSIC, 21 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Mask, Jazz, Dance and Cultural Performance Project

Prof. Rapson collaborated with UI professors and Italian artists to produce original music for a theatre work of ninety minutes. The production entitled 'Crescendo' opens on October 9, 2014 for ten shows that include UI students and faculty working in consort with professional actors and musicians from Minneapolis, Chicago, Italy and Brazil. The collaborative project employs physical theatre, mask and jazz for a performance that challenges current policies and norms in education. During his 2014 PDA, Prof. Rapson composed twelve major works for jazz orchestra and twenty-nine incidental works for smaller ensembles. These works were edited and printed in the summer of 2014 for rehearsals to begin in the first week of the Fall 2014 semester. In addition to his writing duties, Rapson lectured and conducted ensembles in California, Michigan and Brazil while on assignment in the Spring of 2014.

**RATNER, ALBERT, ASSOCIATE PROFESSOR, MECHANICAL AND INDUSTRIAL ENGINEERING, 11 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Implementing Use of Bio-char Through State-Wide Collaboration

The goal of this PDA project was to advance the concept of bio-char use on agricultural lands, and to bolster these efforts by developing connections and joint proposals with faculty at Iowa State University. This leave was successful, with Prof. Ratner having met multiple times with both Agronomy and Mechanical Engineering faculty at Iowa State, completing and submitting one joint proposal, and two other proposals are in development and are expected to be submitted in the near future.

**ROCHA, RENE R., ASSOCIATE PROFESSOR, POLITICAL SCIENCE, 8 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* The Political Implications of Immigration Enforcement

Prof. Rene Rocha researched the political and social effects of immigration enforcement. Specifically, he studied: (1) how the Secure Communities Program changed the way Latinos and non-Latinos feel about government, (2) how mass deportations changed the way people react to the presence of immigrants in their communities, and (3) how enforcement-oriented policies changed migration patterns among Mexican immigrants. The results of this research will inform the discourse on immigration policy and reform in Iowa and across the country. The project also gave students the opportunity to become involved in research.

**ROY, CHRISTOPHER, PROFESSOR, ART AND ART HISTORY, 36 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Continuity and Change in the Art of the Mossi People, Burkina Faso

Prof. Roy spent spring semester 2014 in Africa and in Europe. He spent six weeks in the Republic of South Africa, at the University of the Witwatersrand and at the University of Cape Town working with faculty and students on exhibitions of African art and presenting his own research on the art of Burkina Faso. After 45 years of teaching about African culture this was his first opportunity to visit southern Africa. He spent time in both Johannesburg and Cape

Town. He spent a week each in Ouagadougou, the capital of Burkina Faso, in Paris, and in Berlin, visiting museums of African art to study objects from the Mossi people to use in his new book (2015) on the art of the Mossi of Burkina Faso. Prof. Roy's classes are extremely popular with very large (240) enrollments every fall. His work this past spring will contribute to his ability to speak from first hand experience about art and life in Africa.

**SAHA, PUNAM K., PROFESSOR, ELECTRICAL-COMPUTER ENGINEERING, 8 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Medical Image Segmentation Using Minimum Barrier Distance

For his fall 2013 PDA, Prof. Saha spent four months at the Centre for Image Analysis, Uppsala University, Sweden leading to a productive collaboration with Drs. Borgefors, Strand, and Nyström, and attended two conferences – ICIAP (Naples, Italy) and PReMI (Indian Statistical Institute, Kolkata, India). This project was productive on different fronts: (1) ten papers (in-press/revised/submitted/under-preparation) in reputable journals and another five papers at peer-reviewed international conferences, (2) managing editorship of a special issue on Skeletonization and its Application at the Patt. Recog. Let. journal, (3) a probable special issue at the Comp. Vis. Image Und. journal on topology and shape of fuzzy objects, (4) track chair at the ICPR'14 conference, (5) attended two international conferences and presented five invited talks. Four grants were applied for and the research will benefit future research and grant applications relating medical image segmentation and quantitative structural analysis on musculoskeletal, pulmonary, and neuro-imaging research.

**SANDERS, SARA, ASSOCIATE PROFESSOR, SOCIAL WORK, 12 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Death Investigation for Elders Who Experienced Possible Elder Abuse

During her PDA, Prof. Sanders engaged in several different research projects. While originally planning to spend the award period only conducting research on sudden and unexpected death among older adults, Dr. Sanders also examined the role of advance care planning among chronically ill offenders at the Iowa Medical Classification Center and led an evaluation effort of the End-of-Life Field of Practice for the School of Social Work. Additionally, she, in collaboration with a colleague in the College of Nursing, submitted a grant to test the effectiveness of an intervention for caregivers of individuals with Alzheimer's disease and Related Dementia. These projects combine Prof. Sanders' interest in both gerontology and end-of-life care. The projects have relevancy at both the state and national level as systems are looking to enhance care for both the dying and older adults. Her work with the Medical Examiner's Department will occur this semester.

**SAUDER, MICHAEL E., ASSOCIATE PROFESSOR, SOCIOLOGY, 9 YEARS OF SERVICE, FALL SEMESTER**

*Title:* The History and Contemporary Influence of Educational Rankings

Prof. Sauder completed the first draft of a book manuscript about the effects of educational rankings on colleges and universities. He is currently revising these chapters, and three of the six chapters are ready to submit for publication. In addition, Prof. Sauder completed two journal articles. One article was accepted by the American Journal of Sociology (in press). The second article has been conditionally accepted at the Sociology of Education. Finally, Prof. Sauder used the PDA to develop a new project on the effects and effectiveness of medical measures. He presented preliminary findings of this work at several venues within the UI and at other universities (Indiana University, Stanford, University of Pennsylvania). These research activities, all of which concern the study of organizations and organizational behavior, will benefit Prof. Sauder's teaching of complex organizations in both his undergraduate and

graduate courses. The insights gained from this research provide a better understanding of both how to increase the effectiveness of public measures and how to prevent harmful unintended consequences.

**SCHIFF, ROBYN, ASSOCIATE PROFESSOR, ENGLISH, 6 YEARS OF SERVICE, HALF TIME FOR ONE YEAR**

*Title:* Poems: Journal of a Plague Year

Prof. Schiff composed her third poetry collection, comprised of poems that explore haunting, illusion, the presence of the past, and shadowy ambiguity to express familial bonds in an age of global fear and paranoia. Prof. Schiff's project will result in the publication of a book, which has been accepted for publication in 2016. Several individual poems have been placed or are forthcoming in literary journals, and additional poems are under review. During the PDA, Prof. Schiff read from her poems in professional settings, including as an invited speaker at the Library of Congress. Readings of work composed during the PDA period are scheduled for future presentation at the Associated Writing Programs conference, and by the Poetry Foundation. By reckoning with difficult emotional material, Prof. Schiff's work offers artistic engagement with complicated issues, using the poetic tradition to address intense human experience, and thus, adding to our ability to understand one another and ourselves through artistic means. Work on this project will contribute to Prof. Schiff's courses in the English Department, including Creative Writing Track: Advanced Topics and Approaches to Nonfiction.

**SESSIONS, JENNIFER E., ASSOCIATE PROFESSOR, HISTORY, 9 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* The Margueritte Affair: Colonialism on Trial in Fin-de-siècle Algeria and France

Prof. Sessions completed primary research for her book about the Margueritte Affair, a 1901 uprising against French rule in Algeria and the debate it sparked about French settler colonialism in North Africa. During her PDA, she conducted archival research in colonial, national, and military archives in France, gave several presentations of her findings at university seminars, scholarly conferences, and museums in Europe, and prepared additional funding proposals. The materials collected during her PDA will allow Prof. Sessions to develop new units on colonial society in French Algeria for her courses on modern France, modern Algeria, and European imperialism. These courses and the completed book will help Iowa students, scholars, and society more generally to better understand the role of economic, political, and religious conflicts in shaping colonial frontier societies like our own.

**SEVERINO, CAROL J., PROFESSOR, RHETORIC, 24 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Sources of Word Choice Error in Second Language (L2) Use

Prof. Severino focused on three projects that will enhance her professional development as well as instruction in Iowa at UI and other Regents institutions that teach international students. The first was an article on Chinese students' English word choice errors she revised for Writing Center Journal accepted for publication in 2015. The second was a case study of second language writing development for which she has collected all the data and has almost completed the analyses. A proposal based on this project was accepted for the Symposium on Second Language Writing. The third was a diary self-study of her own language learning, "Composition Teachers as Second Language Learners," for Composition Studies, based on her experiences taking Spanish and Chinese courses [draft under circulation among colleagues]. She presented some of this material at Dickinson College for foreign language teachers and tutors and collaborated with her host on a conference proposal about Multilingual Writing Centers, which was accepted. Secondary projects include a book review for publication in

Modern Language Journal in 2015 and serving as an external reviewer for a faculty member/vice provost.

**SIMMONS, TOM, ASSOCIATE PROFESSOR, ENGLISH, 22 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Imperial Release: Madness and Subjectivity in British Literature, 1763-1928

During his PDA, Prof. Simmons completed the introduction to his projected book Imperial Release. He also happened upon the life, publications, and recordings of the late University of Iowa folklore professor Harry Oster (1923-2001; Iowa faculty member 1963-1994). Prof. Simmons conducted numerous original interviews with surviving family members, fellow musicians, and friends of Prof. Oster, along with much background research in the field of folklore, and wrote a 58-page chapter and an 11-chapter outline for a book 'The Aim was Song: Harry Oster and the Problem of American Folklore.' The book is currently under the consideration of the Acquisitions Editor at the University of Illinois Press, and its contents will become a new course on American folklore within the Department of English. In addition, the book and the class highlight a crucial person and period for music and folklore in the history of Iowa.

**SLUSARSKI, DIANE C., PROFESSOR, BIOLOGY, 16 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Mechanisms of Organ Function and Repair

Prof. Slusarski had three distinct objectives to fulfill during her PDA. They involved intensive commitment to research projects, travel to host labs to learn new techniques, obtain reagents and to coordinate collaborations, and finally, to devote time and energy for grant and manuscript submission. Prof. Slusarski successfully learned new techniques and generated reagents important for her research program. She presented seminars at Iowa State University and Baylor College of Medicine and participated in an outreach session at Drake University. She attended a workshop to provide advice to the National Institutes of Health regarding the technological and conceptual advances necessary to fully realize the potential of the zebrafish as a translational model organism. She also interacted with a colleague at the Carnegie Institute in Washington that is developing new teaching paradigms for science education. Prof. Slusarski submitted two grants and three publications during the developmental leave.

**STANIER, CHARLES O., ASSOCIATE PROFESSOR, CHEMICAL & BIOCHEMICAL ENGINEERING, 10 YEARS OF SERVICE, FALL SEMESTER**

*Title:* Technical and Policy Barriers to Tradable Multimedia Nitrogen Emission Reduction Credits

Prof. Stanier secured an appointment as a Visiting Associate Professor of Atmospheric Science at the University of Maryland College Park, a leading atmospheric science program. Outcomes of the PDA were: (1) the inclusion of the University of Iowa as a partner in a \$93.25 million Maryland-led NASA satellite proposal; (2) the establishment of new collaborations and contacts that improve Prof. Stanier's performance as a scholar and mentor; and (3) the advancement of several manuscripts toward publication. Prof. Stanier managed an ongoing field campaign in Illinois, participated in a large NASA field campaign in Texas, mentored a research group back in Iowa, and mentored new instructors of the F2013 Iowa course CBE:4105. Prof. Stanier met with numerous collaborators and publicized research widely. The PDA benefits students of the University of Iowa through expanded research opportunities, and it benefits the State of Iowa through potential federal funding and advancement of the science of greenhouse gas measurement and modeling.

**STRATTON, MARGARET M., PROFESSOR, ART AND ART HISTORY, 28 YEARS OF SERVICE, HALF TIME FOR ONE YEAR**

*Title:* Missing In Action: Vietnamese Landscape as Historical and Cultural Mirror

Prof. Stratton completed her PDA research in Vietnam, photographing the signs and symbols that identify and separate the cultural environments staged for visitors and tourists from the realities of the Vietnamese people. Courses affected by Prof. Stratton's research include Digital Intermediate Photography, Advanced Photography and the Graduate Workshop. Digital Intermediate Photography is the gateway to specialized seminar and project oriented courses that constitute advanced study in photography, populated by BFA's in MSPD, photography, Graphic Design, and Intermedia. Stratton developed skills to teach students the art of researching, proposing and applying for funding in a very competitive digital world. Prof. Stratton also established photographic guidelines and techniques that will help students make respectful images of unfamiliar people and places. Depicting the people of contemporary Vietnam for everyday American's was another goal of Prof. Stratton's research. This component will be realized by seeking public venues for her Vietnam photographs, so that a larger audience can learn from the work. Thus far, the work has been exhibited at the Huston Center for Photography.

**TACHAU, KATHERINE H., PROFESSOR, HISTORY, 29 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Scientists, Painters, and Apothecaries: Making and Theorizing About Color at Paris in the 13th-14th Centuries

The purpose of Prof. Tachau's PDA was to continue researching and to write a short monograph (ca. 200 pages), Scientists, Painters, and Apothecaries: Making and Theorizing About Color at Paris in the 13th-14th Centuries. This was an optimistic goal that, thanks to unanticipated research discoveries, was partly achieved, but also led to her writing more than 200 new pages of another book manuscript that she had expected to complete before her PDA. Prof. Tachau continues to work on her PDA project at a slower pace, now that she has returned to teaching. She will be integrating her PDA work into new lectures in at least two (undergraduate) courses and her interdisciplinary (undergraduate and graduate) course for the UI Center for the Book. Most of Prof. Tachau's research is analogous to "basic" rather than "applied" science, so its societal benefits are primarily indirect, through her development of research networks to which she connects her students and by informing her work as an appointed, citizen member of the National Council for the Humanities.

**VALERIO-JIMENEZ, OMAR S., ASSOCIATE PROFESSOR, HISTORY, 8 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* Remembering Conquest: Mexican Americans, Memory, and Citizenship, 1846-1996

Prof. Omar Valerio-Jiménez completed research for half of the chapters for his book on memories of the United States-Mexican War (1846-48). The book explores the ways that memories of the war have shaped Mexican Americans' civil rights struggles over several generations. The PDA allowed Prof. Valerio-Jiménez to visit several archival locations in California and Texas, to present preliminary findings in academic settings, to complete several writing projects, and to submit grant applications to fund additional research. The research completed will shape the material that Prof. Valerio-Jiménez presents in several of his undergraduate and graduate courses, and will also permit him to develop a new undergraduate course on war memories. This project will contribute the histories of the United States, Mexico, and the war. It will also contribute to a general understanding of the experiences of ethnic minorities incorporated into nations as a result of wars.

**WILLIAMS, RACHEL M., ASSOCIATE PROFESSOR, GENDER, WOMEN'S, AND  
SEXUALITY STUDIES, 15 YEARS OF SERVICE, SPRING SEMESTER**

*Title:* The Detroit Race Riot of 1943 a Graphic History Project

The PDA enabled Prof. Williams to visit a number of important archives including the Detroit Public Library where she spent two days studying the mayor's papers from 1943, the Wayne P. Reuther Library at Wayne State, where she gathered primary source material about the Sojourner Truth Housing riot, and the Bentley Historical Library, where she examined secondary sources related to the newspaper coverage of the riot in 1943 in Detroit. She also spent a number of days at the National Library of Congress where she studied the papers of the NAACP and collected a great deal of historic data and primary source material directly related to the 1943 riot. Prof. Williams also finished the first three chapters of her book, which included over 100 drawings and met again with staff at UNC press. In addition she spoke at Ball State University and the University of Michigan about her work. This PDA allowed Prof. Williams to gain a stronger understanding of ways to teach students to use regional, university and national archives and helped her to develop stronger pedagogy related to teaching sequential art and creating historical narratives.

**ZIMMERMAN, DALE, PROFESSOR, STATISTICS & ACTUARIAL SCIENCE, 28 YEARS OF  
SERVICE, FALL SEMESTER**

*Title:* Antedependence Models and Inference for Skewed and Discrete Longitudinal Data

During his PDA, Prof. Zimmerman developed antedependence models for non-normal longitudinal data, in particular for data that are skewed, heavy-tailed, or discrete. He determined conditions under which several multivariate distributions for such data can exhibit antedependence. For models satisfying those conditions, as well as other, more structured antedependence models, he developed likelihood-based methods to obtain estimators and perform hypothesis tests on model parameters. Together with co-author Shuching Chang, he wrote drafts of two papers based on this research, which are near ready for submission to peer-reviewed journals. He also used this research as a basis for a grant proposal submitted to the National Science Foundation.



IOWA STATE UNIVERSITY

**BRADBURY, SUSAN, PROFESSOR, COMMUNITY AND REGIONAL PLANNING, 13 YEARS OF SERVICE, 1/1/14-5/15/14**

Professor Bradbury completed one-third of her book, *Guidelines for Implementing a Comprehensive Plan*, which will fill several important gaps in the community planning literature. The book will also inform a class in site planning, which she will teach for the first time in 2015. Bradbury also made major revisions to case studies on Main Street Iowa, which was published in the *Journal of Architectural and Planning Research* in April 2014; and bi-national planning, which has been accepted for publication in the *International Planning Studies Journal*.

**CALL, ANSON, ASSOCIATE PROFESSOR, GRAPHIC DESIGN, 11 YEARS OF SERVICE, 8/13-12/13**

Professor Call used his assignment to complete an e-book, *Cinema 4D R15 Fundamentals*, which was published in July 2014. The new text provides Iowa State students with up-to-date instruction in a fast-paced field. Also, its publication as an e-book lowers the cost of needed course materials, while at the same time enabling more frequent updates as technology evolves.

**CLIFFORD, ANNE, PROFESSOR, PHILOSOPHY AND RELIGIOUS STUDIES, 6 YEARS OF SERVICE, 8/26/13-12/20/13**

Professor Clifford used her assignment to write substantial portions of her monograph, *Creation and the Natural Sciences*, a student-focused book that will show how religion and the sciences have historically been intertwined. The research has also contributed to her undergraduate teaching; in fact, much of the research material has already been tested with students enrolled in the department's new "Christianity and Science" course.

**CORREIA, ANA-PAULA, ASSOCIATE PROFESSOR, SCHOOL OF EDUCATION, 9 YEARS OF SERVICE, 8/20/13-12/21/13**

Professor Correia spent her assignment examining collectivist cultures in at Portuguese Open University in Lisbon. The collaboration inspired a redesign of her class, *Evaluating Digital Learning Environments*, to include more authentic learning experiences online. While in Lisbon, Correia gave two presentations on online learning and teaching, and submitted and gained acceptance for a major conference presentation in online learning. She also shared her findings in a School of Education Seminar for colleagues at Iowa State.

**DELADE, KATHLEEN, PROFESSOR, HORTICULTURE AND AGRONOMY, 17 YEARS OF SERVICE, 1/1/14-5/15/14**

Professor Delade studied organic agroecosystems in Italy during her assignment, including policies and regulations related to the European Union and Italian government. These efforts will improve Iowa State's research capabilities in organic farming, and help producers increase the efficiency of their operations. Delade's work also resulted in three manuscripts, an Iowa State Extension and Outreach report, seven seminars, \$1.3 million in USDA funding, and an additional \$660,000 in funding still pending.

**DIXON, PHILIP MICHAEL, UNIVERSITY PROFESSOR, STATISTICS, 16 YEARS OF SERVICE, 1/1/14-5/15/14**

Professor Dixon spent his assignment at the Centre for Research in Ecological and Environmental Monitoring in Scotland, developing hierarchical models that can be applied to statistical analyses of environmental data. This work was presented at the International Statistical Ecology Conference in July 2014. Dixon's assignment also resulted in the completion of three manuscripts, and the knowledge gained will help improve Iowa State's courses in spatial statistics and environmental statistics courses.

**GOULD, CINDY, ASSOCIATE PROFESSOR, INTEGRATED STUDIO ARTS, 15 YEARS OF SERVICE, 8/26/13-12/20/13**

Professor Gould traveled to India during her assignment, where she served as a visiting faculty member at two institutions, participated in undergraduate and graduate textile and fashion design studio classes, and developed exchange opportunities for Iowa State students and faculty. Gould also spent four weeks with a leading freelance textile designer, conducted research on Indian embroidery, taught workshops on color and design at the Princess Diya Kumari Foundation, and finished several works of art inspired by Indian block printing and tie and dye techniques. The knowledge gained during her assignment will also be used in Gould's color and textile courses at Iowa State.

**HAAS, BARBARA, ASSOCIATE PROFESSOR, ENGLISH, 28 YEARS OF SERVICE, 1/1/13-7/31/13**

Professor Haas produced and published four nonfiction essays during her assignment, spent at various locations in Russia. She also created two visual essays on Moscow's subway system and the Moika River in St. Petersburg. Haas has carved out a unique specialty niche – she is one of few essayists writing in English about Russian environmental concerns, which brings a global focus to Iowa State's M.F.A. program, and helps students develop international writing projects on the environment.

**KANG, SUNGHYUN, PROFESSOR, GRAPHIC DESIGN, 16 YEARS OF SERVICE, 1/13/14-5/8/14**

Professor Kang used her assignment to explore how culture and living environment affect visual communications and user experiences in Korea. She conducted face-to-face interviews with more than 100 people, and planning to analyze the data and submit her results to relevant design journals. The results of her work may be applied in various areas including logo design, icon design for smartphones, and other web-based visual content, and will also be incorporated into Kang's Iowa State courses.

**KARPOVA, ELENA, ASSOCIATE PROFESSOR, APPAREL, EVENTS, AND HOSPITALITY MANAGEMENT, 9 YEARS OF SERVICE, 8/19/13-12/31/13**

Professor Karpova developed a multinational virtual team-based project during her assignment at the University of Pretoria, South Africa. She began implementing the project in the fall of 2014 with 24 teams of undergraduate students enrolled in apparel programs in Pretoria, Iowa State, and the Royal Melbourne Institute of Technology in Australia. Karpova also developed a new AESHM study abroad program to South Africa. As a result of these efforts, current and future Iowa State students will be better prepared to enter the global apparel industry.

**KAMAL, AHMED, PROFESSOR, ELECTRICAL AND COMPUTER ENGINEERING,  
15 YEARS OF SERVICE, 8/16/13-12/31/13**

Professor Kamal studied group communications and data exchange in the photonic cloud at four universities in France and Canada. These efforts resulted in new collaborations with leading international colleagues, and an NSF funding proposal that was recently resubmitted following feedback from reviewers. Kamal also spent a portion of his assignment at Iowa State exploring new areas of research and teaching.

**KIM, JAE-KWANG, PROFESSOR, STATISTICS, 6 YEARS OF SERVICE, 8/16/13-12/31/13**

Professor Kim used his assignment to develop a statistical methodology for data fusion, a promising new area of big data and science. This effort has resulted in the submission of three manuscripts, and a \$225,000 USDA contract for "Improving the Methodology for Using Administrative Data in Agricultural Statistics."

**KIM, STEPHEN, PROFESSOR, MARKETING, 8 YEARS OF SERVICE, 8/26/13-12/31/13**

Professor Kim traveled to South Korea during his assignment, where he examined differences in automobile marketing between the two countries. His work, which included field interviews and data collection, included revising a manuscript, developing a research project on plural channel governance, and delivering a research presentation to senior executives of Hyundai Motors Corporation. Information gained from the interviews will be used in multiple undergraduate and graduate marketing courses.

**KUPFER, JOSEPH H., UNIVERSITY PROFESSOR, PHILOSOPHY AND RELIGIOUS  
STUDIES, 43 YEARS OF SERVICE, 8/13-12/13**

Professor Kupfer used his assignment to complete and publish *Meta-Narrative in the Movies: Tell Me a Story*, a philosophical book that analyzes stories and storytelling in movies. The book demonstrates the value and influence of narrative in our everyday lives, and will be used to widely for students studying both philosophy and film.

**MALLAPRAGADA, SURYA, PROFESSOR, CHEMICAL AND BIOLOGICAL ENGINEERING,  
18 YEARS OF SERVICE, 8/15/13-11/15/13**

Professor Mallapragada spent her assignment at the Indian Institute of Technology-Madras and National University of Singapore, where she expanded projects and collaborations for her research group, and connected with potential Iowa State graduate students. She also helped organize portions of Governor Terry Branstad's trip to India in September 2013, and was part of an Iowa State delegation to visit the All-India Institute of Medical Sciences to promote the presidential nanovaccine initiative. Mallapragada's academic efforts included several invited talks and presentations, work on 10 manuscripts, and submission of annual reports on several large-scale federal grants.

**MARCKETTI, SARA, ASSOCIATE PROFESSOR, APPAREL, EVENTS, AND HOSPITALITY  
MANAGEMENT, 17 YEARS OF SERVICE, 1/1/14-5/15/14**

Professor Marcketti spent the majority of her assignment completing edits to the sixth edition of her textbook, *Survey of Historic Costume*. She also submitted three peer-reviewed journal articles (one of which is already in press), two encyclopedia entries, and 12 submitted and accepted peer-reviewed conference presentations, including a Costume Society of America regional conference, and a DMACC Teaching and Learning Conference.

**MONROE, JOHN, ASSOCIATE PROFESSOR, HISTORY, 12 YEARS OF SERVICE, 8/15/13-5/15/14**

Professor Monroe spent his assignment in Ames and France, researching and writing substantial portions of a book manuscript on the invention of primitive art. The book will be the world's definitive text on this topic, improving art historians' understanding of 20<sup>th</sup> century western painting and sculpture, and exploring the circulation of African art objects in an age of imperialism. Monroe also produced three book reviews for scholarly journals. His work was supplemented by a grant from the Howard Foundation; an additional application for a National Endowment for the Humanities fellowship is under review.

**MOSCHINI, GIANCARLO, PROFESSOR, ECONOMICS, 27 YEARS OF SERVICE, 1/1/14-5/15/14**

Professor Moschini studied the economic impacts of intellectual property rights during his assignment, spent at the University of California-Berkeley. Particular attention was paid to biotechnology innovations in agriculture, including the bioenergy sector. Moschini's work resulted in the submission of four journal manuscripts, two invited presentations, and a competitive USDA-NIFA grant of \$245,000.

**NAEGELE, DANIEL, ASSOCIATE PROFESSOR, ARCHITECTURE, 13 YEARS OF SERVICE, 1/1/14-5/15/14**

Professor Naegele used his assignment to complete a manuscript and collection of illustrations on *The Letters of Colin Rowe*, who revolutionized architectural education in the U.S. and England. Naegele's work was also funded by \$15,000 in grants from the Graham Foundation, and the Paul Mellon Foundation for the Study of British Arts, as well as a \$20,000 Iowa State University book subvention grant.

**NARASIMHAN, BALAJI, PROFESSOR, CHEMICAL AND BIOLOGICAL ENGINEERING, 14 YEARS OF SERVICE, 8/15/13-11/15/13**

Professor Narasimhan spent his assignment at the Indian Institute of Technology-Madras and National University of Singapore, where he developed new collaborative research opportunities in the areas of nanovaccines for viral infections and tropical diseases, and inorganic nano-carriers for drug delivery. Narasimhan showcased Iowa State's chemical engineering capabilities in several invited presentations, recruited graduate students, submitted five publications, and four research proposals totaling \$45 million.

**PASSE, ULRIKE, ASSOCIATE PROFESSOR, ARCHITECTURE, 8 YEARS OF SERVICE, 8/15/13-12/31/13**

Professor Passe used her assignment to complete a book, *Designing Spaces for Natural Ventilation: An Architect's Guide*, which will be published in April 2015. Work done for a chapter on natural ventilation in the urban context will be used in external funding opportunities and research collaborations. Passe also delivered invited presentations on urban microclimate modeling at Columbia and Rutgers universities.

**PETERS, REUBEN, PROFESSOR, ROY J. CARVER DEPARTMENT OF BIOCHEMISTRY, BIOPHYSICS, AND MOLECULAR BIOLOGY, 12 YEARS OF SERVICE, 8/1/13-12/31/13**

Professor Peters visited research institutions in Germany and the United Kingdom during his assignment, where he initiated new collaborative projects, and generated valuable preliminary research data that will support future competitive grant applications. Peters has obtained \$490,000 in USDA funding for his rice rhizosphere microbiome project, which began during his last FPDA in 2009, and prepared additional grant proposals to the NSF and NIH.

**PETERSON, DAVID A. M., PROFESSOR, POLITICAL SCIENCE, 5 YEARS OF SERVICE,  
1/1/14-5/15/14**

Professor Peterson gathered data for a large grant proposal in the area of Supreme Court decision-making, and worked with colleagues across campus on a proposed Research Experiences for Undergraduates (REU) program in Wind Energy Science, Engineering, and Policy. Peterson also submitted two grant proposals for a combined \$675,000 in competitive external funding, and had two papers accepted for publication during his assignment.

**RAJAN, HRIDESH, ASSOCIATE PROFESSOR, COMPUTER SCIENCE, 9 YEARS OF  
SERVICE, 1/1/14-5/15/14**

Professor Rajan worked with students and colleagues on designing, improving, and evaluating the implementation of Panini computer programming language. The assignment resulted in two major conference presentation proposals, reorganization of Iowa State's Principles of Programming Languages undergraduate course, mentoring of graduate students and post-doctoral fellows, and a \$450,000 NSF award to study capsule-oriented programming.

**RUSSELL, DAVID, PROFESSOR, ENGLISH, 26 YEARS OF SERVICE, 8/15/13-5/15/14**

Professor Russell completed a reanalysis of the Stanford Longitudinal Study of Writing data during his assignment, which has resulted in a book on how students develop writing skills in their college and early professional years, as well as invited presentations in the U.S., Brazil, France, and Romania. The research will also be used in the design of course curricula in ISUComm foundation courses to improve Iowa State students' communication skills.

**SARKAR, PARTHA, PROFESSOR, AEROSPACE ENGINEERING, 14 YEARS OF SERVICE,  
8/16/13-12/31/13**

Professor Sarkar traveled to Japan, China, and India during his assignment, where he developed new wind energy research projects, published four journal articles (one additional article has been accepted but not yet published), delivered nine invited presentations, one conference presentation, and a report on wind tunnel testing. He also submitted an NSF funding proposal for \$250,000, and developed a course on wind energy system design for Iowa State's new interdisciplinary Wind Energy Science, Engineering, and Policy program.

**SCHAEFER, VERNON, PROFESSOR, CIVIL, CONSTRUCTION, AND ENVIRONMENTAL  
ENGINEERING, 12 YEARS OF SERVICE, 1/1/14-6/30/14**

Professor Schaefer spent his assignment at the Federal Highway Administration in Washington, DC, where he provided key input on the development of the Administration's Geotechnical Asset Management and Highway Geohazards programs. Schaefer's expertise and input will position Iowa State for future funding opportunities within these five-year research programs. He also prepared two papers for publication, and wrote a research needs statement for use by federal and state transportation agencies.

**SCHWAB, ANDREAS, ASSOCIATE PROFESSOR, MANAGEMENT, 6 YEARS OF SERVICE,  
8/13-5/14**

Professor Schwab's assignment supported research in the field of project management, in collaboration with colleagues in Singapore, Australia, and Indiana. This work resulted in a \$400,000 grant from the Australian government (co-PI), and a new entrepreneurship research project in Singapore, which has been submitted for publication. Schwab also served as guest editor for special issues of *Organization Studies* and the *International Journal of*

*Entrepreneurship and Small Business*. This assignment, supported by a Fulbright Senior Scholar Teaching Award for Indonesia, will also provide the foundation for Schwab's undergraduate and graduate-level teaching.

**SIMONSON, DONALD R., PROFESSOR, MUSIC, 36 YEARS OF SERVICE, 8/20/13-12/20/13**

Professor Simonson traveled to Norway and Minneapolis during his assignment, conducting research on Norwegian language pronunciation as applied to classical singing, for a text on *Scandinavian Song: A Guide to Diction and Repertoire*. Simonson has also shared the knowledge gained from this research with Iowa State students, expanding their repertoire to an underutilized and often neglected collection of choral music, and is developing a new course in Norwegian Art Song.

**SIVILS, MATTHEW, ASSOCIATE PROFESSOR, ENGLISH, 6 YEARS OF SERVICE, 8/26/13-12/20/13**

Professor Sivils used his assignment to explore archives related to early American natural history, and complete the manuscript of his book, *The Rise of American Environmental Literature, 1782-1847*. Sivils' groundbreaking research, including how early American children's literature portrayed the environment, will be integrated into Iowa State undergraduate and graduate courses, and enhance the university's scholarly profile in this area.

**SMITH, ARTHUR A., PROFESSOR, PHILOSOPHY AND RELIGIOUS STUDIES, 34 YEARS OF SERVICE, 1/14-5/14**

Professor Smith used his assignment to complete and submit for publication a book, *Beyond Liberal Egalitarianism: Marxism and Normative Social Theory in the Twenty-First Century*, as well as three papers for scholarly publications. Research for the book will provide the foundation for future research and writing, and be incorporated into Iowa State undergraduate and graduate courses in philosophy.

**SONG, JIMING, ASSOCIATE PROFESSOR, ELECTRICAL AND COMPUTER ENGINEERING, 12 YEARS OF SERVICE, 1/1/14-5/15/14**

Professor Song spent his assignment at universities in China and Singapore, where he developed international collaborations in the area of antenna applications. The information gained from his visits will be used in his teaching. Song also submitted a report on algorithms for predicting electromagnetic scattering, and recruited students for Iowa State's graduate programs in electrical and computer engineering.

**SRITHARAN, SIVALINGAM, PROFESSOR, CIVIL, CONSTRUCTION, AND ENVIRONMENTAL ENGINEERING, 15 YEARS OF SERVICE, 8/125/13-12/31/13**

Professor Sritharan studied the seismic design of concrete walls in Switzerland, in support of Iowa State's wind energy program. These efforts resulted in two manuscripts, two international conference presentations, and a \$1 million U.S. Department of Energy research grant to further study concrete wind turbine towers. The knowledge gained from his assignment will also benefit two Iowa State engineering courses.

**VAN LEEUWEN, JOHANNES, PROFESSOR, CIVIL, CONSTRUCTION, AND ENVIRONMENTAL ENGINEERING, 15 YEARS OF SERVICE, 7/1/13-12/31/13**

Professor Van Leeuwen traveled to India and Turkey during his assignment, where he expanded research collaborations in the area of fungal protein production for human consumption, and making biopolymers from wastewater. His work led to four journal

publications, two conference presentations, and research proposals totaling \$6.4 million (\$3.7 of which are still pending).

**VIATORI, MAXIMILIAN, ASSOCIATE PROFESSOR, ANTHROPOLOGY, 9 YEARS OF SERVICE, 8/19/13-12/21/13**

Professor Viatori completed three 10-12,000-word journal articles on race and public discourse in Ecuador during his assignment, which included travel to Chicago and Lima, Peru. The articles explore Ecuador's 1995 border war with Peru, its 1990 indigenous uprising, and interviews with indigenous activists. Viatori also used the assignment to submit funding proposals for his ongoing research on the politics of small-scale fisheries and climate change in Peru.

**WARE, WENDY, PROFESSOR, VETERINARY CLINICAL SERVICES, 28 YEARS OF SERVICE, 2/4/13-8/4/13**

Professor Ware used her assignment to make important progress on the second edition of her book, *Cardiovascular Disease in Companion Animal Medicine*. Other accomplishments during the assignment included data collection and analysis on a family of dogs with an inherited heart defect; a presentation based on this analysis at the American College of Veterinary Internal Medicine Annual Scientific Forum; and authored and co-authored manuscripts on Long QT Syndrome in dogs. This work will also improve both teaching and teaching materials for Ware's courses at Iowa State.

**WANG, XINWEI, PROFESSOR MECHANICAL ENGINEERING, 7 YEARS OF SERVICE, 1/1/14-5/15/14**

Professor Wang spent his assignment in Ames and China, where he implemented a lab experiment platform at Qingdao University, conducted research on biomaterials, and described a novel electron transport process that has since been published in *Applied Materials and Interfaces*. Wang also served as guest editor for a special issue of the Journal of Nanoscience and Nanotechnology, gave an invited talk at the University of Iowa on nanoscale thermal probing, and developed strategies to improve ME370: Engineering Measurement and Instrumentation.

**WIE, BONG, PROFESSOR, AEROSPACE ENGINEERING, 7 YEARS OF SERVICE, 1/15/14-5/15/14**

Professor Wie used his assignment to visit with lawmakers interested in planetary defense against hazardous asteroids, attend NASA technical meetings, and promote the work of Iowa State's Asteroid Deflection Research Center. These efforts resulted in a white paper on Planetary Defense Readiness Assessment and Recommendation, as well as two grant proposals for a combined \$600,000 (\$550 is pending).

UNIVERSITY OF NORTHERN IOWA

**ALAM, IMAM, ASSOCIATE PROFESSOR, ECONOMICS, 18 YEARS OF SERVICE, FALL 2013**

*Gender Differences in Pay of Working Children in Bangladesh: An Empirical Study*

Child labor is a pervasive problem throughout the world affecting both consumers and producers of goods and services. Using data from the 2002-03 *National Child Labour Survey* of Bangladesh, Professor Alam measured and analyzed the gender earnings gap between working boys and girls in Bangladesh, including working children who do not earn a wage. His study is the first to investigate the gender earnings gap in the child labor market (as opposed to the adult labor market). He found that girls' earnings are close to boys' earnings in the formal sector, largely because of their position of near pay equality in the textile industry. However, there is a significant gender earnings gap in the overall child labor market in Bangladesh, due to the larger percentage of girls who work for no pay, for instance at home. **The objectives of the PDA were met.** These results have been accepted for publication in the peer-reviewed *Journal of Developing Areas*. Students at UNI and Iowans in general are increasingly becoming more mindful of child labor around the world. Iowa U.S. Senator Tom Harkin created the Child Labor Deterrence Act in 1992. This bill was supposed to prohibit the importation of products that had been produced by child labor, but enforcement has not been strict. Professor Alam's goal as a researcher/teacher is to contribute to this very important area in order to increase public awareness and to provide useful results to policy makers from carefully done research.

**ATKINSON, KENNETH, PROFESSOR, HISTORY, 15 YEARS OF SERVICE, FALL 2013**

*Completion of a Book Manuscript: Galla Placidia: Roman Queen of the Visigoths*

During the PDA, Professor Atkinson completed a draft manuscript of a historical biography of the life and times of the Roman Empress Galla Placidia (388-450 C.E.), the only female ruler of the Roman Empire, but who is virtually unknown today. She was esteemed for her ability to bring a measure of political and economic stability to the Roman Empire during its final days. Her campaign for the rights of non-citizens throughout her realm also makes her a largely unrecognized pioneer of a sort of multiculturalism in the late Empire. Professor Atkinson's book includes significant new discoveries pertaining to her role in shaping Christianity, as well as the impact of the barbarian invasions on the Roman Empire. **The objectives of the PDA were more than met.** In addition to completing the book manuscript, Professor Atkinson has presented portions of his findings at two international conferences, with other conference presentations scheduled, and in an article currently in press in the journal *The Qumran Chronicle*. This work will enhance Professor Atkinson's teaching of his classes in history and humanities. His book, written to be accessible to the layman, will also appeal to a popular audience interested in the history of Christianity, since Professor Atkinson discovered that Galla Placidia wrote much church law, helped select a Pope, and corresponded with many of the great Christian leaders and writers of antiquity. Professor Atkinson's research shows how the ancients dealt with many of the same challenges our society faces today, particularly immigration and multiculturalism. By exploring the ways those in the past tried to solve these problems, he hopes to show the public how the study of history can inform the lives of the citizenry of Iowa.



**BUMPUS, JOHN, PROFESSOR, CHEMISTRY & BIOCHEMISTRY, 20 YEARS OF SERVICE, FALL 2013**

*Molecular Modeling of High Energy Density Materials*

High energy density materials (HEDMs) are used for explosives and high-test fuels. The study of these materials is inherently dangerous, particularly the attempt to synthesize new compounds in quantity. Computational molecular modeling is both safer and less expensive than chemical synthesis, so it is increasingly used as a screening method to select promising compounds to synthesize. Professor Bumpus used computational molecular modeling and characterization to study high energy density materials, focusing on those that have not yet been synthesized. **The objectives of the PDA were met.** Professor Bumpus computationally characterized several theoretical non-cage analogs of known cage-structure nitramines in order to predict the likelihood that the non-cage analogs will have the properties of effective HEDMs. He found that although the non-cage analogs are predicted to produce greater volumes of explosive gases. He also assessed the efficacy of the M06 newly-developed basis set in computations designed to calculate enthalpy of formation, one of the most important thermochemical parameters used to characterize HEDMs. Professor Bumpus has submitted these results to the journal *Advances in Physical Chemistry*, and an undergraduate that he mentored has presented the results at the Spring 2014 national meeting of the American Chemical Society. This project will benefit UNI students as it will enable Professor Bumpus to better mentor undergraduate student research in molecular modeling and computational chemistry and to develop an introductory online course in molecular modeling. He has already incorporated some of this research in the Organic Chemistry Laboratory course, with one of the experiments focusing on computational modeling to characterize theoretical compounds and their possible use as HEDMs.

**ESCANDELL, XAVIER, ASSOCIATE PROFESSOR, SOCIOLOGY, ANTHROPOLOGY, & CRIMINOLOGY, 9 YEARS OF SERVICE, FALL 2013 AND SPRING 2014**

*Ethnic Diversity and Support for the Welfare State in Europe*

Professor Escandell examined the relationship between ethnic diversity and support for social welfare programs. A growing body of literature argues that ethnic diversity negatively affects support for these programs. However, empirical research finds contradictory results and rather weak correlations. During the PDA, Professor Escandell used a cross-national comparative perspective, the European Social Survey, and statistical techniques to discover the relationship between ethnic heterogeneity and support for welfare provisions. He examined the effects of ethnic heterogeneity in two areas: educational outcomes and unemployment benefits. **The goals of the PDA were met.** In the study on gender gaps in educational outcomes among first and second generation immigrants in the context of Europe, he found that migrant youth seem to have better attitudes towards reading than non-migrant youth, but in the case of males, actual performance seems to confirm the aspirations-performance paradox documented in the literature. More positive attitudes towards learning do not necessarily translate into actual performance in the classroom. However, first and second generation female migrants tend to converge with non-migrant female students in class performance. The results of the study focused on attitudes about unemployment benefits suggest that the ethnicity of the unemployed is a key variable shaping the attitudes of insiders (those at low risk of unemployment) and people holding negative views of immigration. These groups are likely to lower their support for policies for the unemployed when the ratio of foreign to native unemployment is high. This suggests that an optimal integration of immigrants in the labor market may become a key factor in preventing declining levels of protection for the unemployed. Iowa is experiencing an increase of ethnic heterogeneity very similar to many European Union countries. This project is

particularly pertinent to the citizens of Iowa because many new immigrants will encounter different forms of social and governmental policies at the state and federal levels, and it is important to understand the factors that affect public support for those policies. Professor Escandell has submitted articles to the *Journal of European Social Policy*, one of the flagship journals in social policy, and to *Sociology Compass*. He has also made several presentations on his work at other universities and at professional conferences.

**FLEMING, WILLIAM M., ASSOCIATE PROFESSOR, SCHOOL OF APPLIED HUMAN SCIENCES, 15 YEARS OF SERVICE, SPRING 2014**

*A Multi-Site Evaluation of the Mentors in Violence Prevention (MVP) Program in High School Settings*

Adolescence is a period where many youth experience aggressive behaviors from their peers. These behaviors can range from name calling, harassment, pushing and shoving to more severe forms of aggression, including dating violence, bullying, and sexual assault. Pro-social bystander approaches have emerged as an important programmatic effort to address this violence and have become more common on college campuses, but implementation at secondary schools has been limited. The Mentors in Violence Prevention program (MVP) is one of the first bystander-focused programs in the domestic violence and sexual assault fields. Where MVP has been implemented in high schools, the program is typically delivered to full cohorts of 9<sup>th</sup> graders by older trained students who serve as the “Mentors.” UNI received a Verizon grant to offer high schools the training opportunity to implement the MVP program. Professor Fleming’s project was to assess the impact of the MVP program within high school settings through a multi-site, multi-method evaluation of the program and its impact on school climate and attitudinal and behavioral changes within high school student populations. The goals of Professor Fleming’s project also included understanding contextual challenges in implementing and sustaining the MVP program in secondary schools and developing pilot data that can serve as a basis for seeking external funding through the Centers for Disease Control and/or the National Institutes of Health. The program was originally scheduled for delivery to the freshmen/sophomores in the Spring 2014 semester. Weather delays and staffing issues that occurred in winter 2013/spring 2014 have pushed the timeline for delivery of the program into the Fall 2014 semester in 3 area secondary schools, and the delivery is ongoing.

There are several benefits of this project to UNI, the citizens of Iowa, and to the general field of violence prevention. As the study concludes over the course of this year, Professor Fleming will produce a multi-site evaluation of the MVP program that can provide critical information for Iowa communities and schools considering implementing the program. This project is timely in several other ways. Iowa was awarded a Safe and Supportive Schools grant from the Department of Education to work with schools across the state to develop programs to make their respective schools safer from bullying, and other forms of youth violence. During the PDA, a funding opportunity from the National Institute of Justice emerged, with a focus on peer-driven violence prevention efforts to engage young men, that matches directly with the MVP program, and Professor Fleming and co-workers have submitted a proposal for approximately \$350,000 to evaluate the MVP program on a larger scale within Iowa.

**FLOYD, ANGELEITA, PROFESSOR, MUSIC, 28 YEARS OF SERVICE, FALL 2013**

*Geoffrey Gilbert (1914-1989), World Class Musician, Transformational Teacher: An Exploration of His Life as an Orchestral Principal and Pedagogical Genius*

The eminent British flutist, Geoffrey Gilbert (1914-1989) led an extraordinary life as a talented flutist, musician, conductor and teacher on two continents, Europe and America. Professor Floyd's project focuses on documenting and recording Gilbert's life in music, his achievements as an orchestral player and gifted pedagogue. His influence on the British school of flute playing transformed generations of flutists throughout the world, his most celebrated students being William Bennett, Trevor Wye and Sir James Galway. Gilbert has been credited as the catalyst for the entire British school of flute playing adopting the silver flute. Writing the complete story of Geoffrey Gilbert's life flows as a natural extension of the scholarly work that Professor Floyd has done on Gilbert's teaching methods (*The Gilbert Legacy: Methods, Exercises and Techniques for the Flutist*, Winzer Press, 1990). During the PDA period, Professor Floyd worked with Gilbert's daughter, Monya Gilbert, for a total of 18 days in two trips to Florida, examining and photographing documents in The Gilbert Family Archives: letters, contracts, correspondence, and more that pertained to Gilbert's life in music. Some of the more notable of these were correspondences from Sir Thomas Beecham, Ralph Vaughn Williams, and Dmitri Shostakovich; an invitation, rehearsal schedule, and admittance cards, to perform as part of the "Coronation Orchestra" at the "Coronation of Her Majesty Queen Elizabeth II" in 1953; and a recording of Gilbert performing on a session with Frank Sinatra in 1962. While in Florida, Professor Floyd photocopied and photographed all of the materials housed in Stetson University's archives related to Gilbert's time as a faculty member there. She also spent a month in England, interviewing Gilbert's former students, including some of the most famous flutists of the modern era, such as Sir James Galway. These interviews were recorded with a professional crew, for use in a documentary film of Gilbert's life that Monya and Professor Floyd are making together. Professor Floyd had intended to collaborate with British flutist and writer, Mr. Adrian Brett, to edit, document, and revise the work that Brett has begun on Gilbert's life in England and then write the second part covering Gilbert's American years from 1969 until his death in 1989. **The objectives of the PDA with respect to Gilbert's time in the U.S. were met.** However, it became clear that Mr. Brett was not interested in writing a scholarly account of Gilbert's life and his material lacked appropriate citations for quoted material. Thus, Professor Floyd's project has expanded to encompass researching and writing about Gilbert's years in England as well. Completion of a full biographical account of Geoffrey Gilbert's life will add a sorely missing perspective, along with factual documentation, to the body of literature on orchestral players and orchestras during this period, and will bring distinction to UNI's School of Music. Professor Floyd has presented her findings so far at two Flute Association conventions and has given a Master Class and Gilbert presentation at Northwestern University.

**GREGERSEN, TAMMY, ASSOCIATE PROFESSOR, LANGUAGES & LITERATURES,  
11 YEARS OF SERVICE, SPRING 2014**

*Watch What I'm Saying: Activities to Enhance Foreign Language Communication through Nonverbals*

**The goals of Professor Gregersen's PDA were met.** She wrote a book for foreign language teachers (including teachers of English as a second language) that seeks to close the gap between theory and classroom applications concerning the significance of nonverbal communication in second language learning. Research suggests that nonverbal behavior plays an important role in the overall communicative process, yet little attention has been given to practical foreign language classroom activities that teachers can use to promote beyond-the-words communicative competence skills. Professor Gregersen's book describes those

classroom activities that improve students' communicative, affective, and cognitive competence. She has signed a contract with a publisher and has also been invited to submit a chapter to a book to be published by *Multilingual Matters*. Professor Gregersen incorporates her work into her UNI classes in teaching English as a second language.

**HETTLE, WALLACE, PROFESSOR, HISTORY, 20 YEARS OF SERVICE, SPRING 2014**

*Book Projects: Lincoln's Partisan Politics and The Confederate Home Front*

Professor Hettle is a Civil War historian. He initially set out to write a biography William Herndon, Lincoln's law partner and first biographer. In the course of his research, he came across an incident during Lincoln's years as a lawyer on the Illinois frontier that set his research on a new course. Lincoln, an ardent supporter of the Whigs, submitted satirical, anonymous newspaper pieces, one of which offended James Shields, an Illinois Democrat. Shields discovered that Lincoln was an author and nearly brought the controversy to the dueling field. Remarkably, much of the offending essay was actually written by Mary Todd, Lincoln's future wife, but to protect her Lincoln took full responsibility, an act that nearly got him killed. Professor Hettle's book project will focus on two aspects of this incident—that 19<sup>th</sup>-century middle-class democracy was not always the reasoned exchange of ideas that some historians have idealized it, and that insufficient attention has been paid to the gendered aspects of political discourse in antebellum America. Professor Hettle also substantially completed a contracted book, *The Confederate Home Front: a History with Documents* during the PDA period, which is a departure for him from the traditional academic monograph. In addition, he has submitted two book reviews to scholarly journals and his Point of View essay was recently published in the *Chronicle of Higher Education*. Although the subject of the PDA project changed over time, **he has met the objective of substantially completing a book manuscript**, as well as several other writing projects. Professor Hettle's writings have popular appeal to Civil War buffs, and he incorporates his research into his UNI classes.

**IQBAL, MOHAMMAD, PROFESSOR, EARTH SCIENCE, 19 YEARS OF SERVICE, FALL 2013**

*Hydrologic assessment of the Cedar River watershed to predict future flood intensities and their impacts on the aquatic ecosystem*

There is no natural resource more important than water to the economy and quality of life in Iowa. Frequent flood events, and associated damage to the aquatic ecosystem and human properties, have brought water issues to the center stage. Most rivers, lakes, and groundwater in the Midwest are being degraded from excessive influx of agricultural fertilizers, herbicides, insecticides, pathogens, and erodible soils from land areas during large storm events or high floods. **The objectives of the PDA were met.** Professor Iqbal performed (1) geo-hydrologic mapping of the Cedar River watershed and a tributary, Dry Run Creek to identify the probable "hot spots" of pollution during excessive rain and/or flood events; (2) comprehensive flood analysis over Dry Run Creek. He found that a good part the discharge into the Cedar River is groundwater, due to rainwater infiltrating the subsurface in upland areas, causing a gradient from the aquifers to the river. On the other hand, when Dry Run Creek floods, there is a reverse gradient and the stream water pushes into the aquifer. The most severe impacts of gradient reversal were found at urban sites with poor infiltration into the subsurface due to paved surfaces. Professor Iqbal measured water quality parameters in both areas throughout the summer and fall, noting huge increases in total suspended solids in April/May from snow melt, and again in late June/July from high rainfall. He has presented his results at four professional conferences and has a journal article in preparation. He obtained two grants (\$85,000 and \$55,000) as a result of his PDA.

**LIU, BIN, ASSOCIATE PROFESSOR, SOCIOLOGY, MATHEMATICS, 7 YEARS OF SERVICE, SPRING 2014**

*Tail Behavior of Probability Distributions in Queuing Process*

Queuing theory has been widely used for computer and communication network system performance evaluation, pertaining to traffic congestion analysis and scheduling of various servicing and logistic systems. Professor Liu applied mathematics project studied the tail probability of some performance measures of queuing processes. For instance, in a communication system, let  $W$  be the delay time before a data packet is transmitted. The tail probability  $P(W > t)$  is the probability that the delay time is longer than  $t$ . Professor Liu examined how fast (or slow)  $P(W > t)$  decays to zero as  $t$  goes to infinity, i.e. how many packets have a very long delay time, for queues with different service disciplines: first-come-first-served, last-come-first-served, and random-order-service. Another project focused on priority queuing, in which certain data types are transmitted without delay, while lower-priority types may experience some delay. Examining these behaviors is important in assessing how well a system is capable of preventing a huge delay time, which greatly degrades the quality of service (QoS) in networks.

**The goals of the PDA were met.** Professor Liu has published one journal article and another is in preparation. The project is related to topics Professor Liu's teaches in courses in UNI's Professional Science Master program in Industrial Mathematics, most of whose graduates are working in Iowa corporations.

**MYERS, MARK, ASSOCIATE PROFESSOR, BIOLOGY, 8 YEARS OF SERVICE, FALL 2013**

*Assessing the Wildlife Habitat Value of Diverse Biomass Energy Prairie Plantings in an Agricultural Landscape*

In 2008, the University of Northern Iowa's Tallgrass Prairie Center received a \$612,222 grant from the Iowa Power Fund to investigate the feasibility of using biomass harvested from diverse plantings of native prairie vegetation as a sustainable biofuel. One major objective of this ongoing research is to determine optimal methods for managing and harvesting prairie vegetation while maintaining high quality habitat for native wildlife. In May 2009, 48 research plots at a farmland site in southeastern Black Hawk County were seeded with one of four treatments of native prairie vegetation: 1) a switchgrass monoculture, 2) a five-species warm-season grass mix, 3) a 16-species biomass mix, or 4) a 32-species prairie mix. From 2009 to 2014, Professor Myers and his students have annually monitored vegetation characteristics and bird and butterfly community dynamics at the site to explore the prediction that more diverse biofuel crops will support a greater abundance and diversity of wildlife species over time. The 2013 growing season marked his fifth year monitoring the site and will also conclude a full cycle of site management, from initial seeding (2009) and establishment (2010), through a prescribed burn (2011) and biomass harvest (2012), and concluding with a year of no active management (2013). During Professor Myers PDA he analyzed a complete, 5-yr data set that provided a complete picture of the wildlife habitat value of biomass energy prairie plantings over a full management cycle. As expected, the plots with greater species diversity provided habitat for a wider diversity of birds and butterflies, but some results indicated that there was little difference between the 16-species mix and the 32-species mix. **The objectives of the PDA were met.** He learned and implemented new data analysis techniques, such as distance-based linear modeling, to relate temporal variation in bird and butterfly communities to measured differences in habitat variables over time. He has used this knowledge to assist graduate students in analyzing their data from other areas of biology. From the results of his research, he has submitted and revised at two journal article manuscripts that are under review. The results of Professor Myers' study have potential practical applications for Iowa landowners and those interested in conserving biodiversity in Iowa's agricultural landscape. His results can be applied to develop management guidelines aimed at producing sustainable biofuel feedstock from

diverse mixes of native vegetation on marginal lands in a manner that also provides improved habitat conditions for Iowa's declining grassland wildlife species.

**O'BRIEN, TYLER, ASSOCIATE PROFESSOR, SOCIOLOGY, ANTHROPOLOGY, & CRIMINOLOGY, 11 YEARS OF SERVICE, FALL 2013**

*Artificial Cranial Deformation: the Anthropology of Head Modification in the South Central Andes*  
Professor O'Brien explored the anthropological subject of an ancient cultural practice called artificial cranial deformation (ACD). He has compiled an abundant bank of craniometric data and a large library of literature on the subject. He returned to the archaeological museums in Argentina that curate these very valuable cranial specimens, this time to access a greater breadth of literature from the museum libraries, which document the late 19<sup>th</sup> and early 20<sup>th</sup> century discoveries of the skulls. **The objectives of the PDA are nearing completion.** Professor O'Brien has substantially completed a book manuscript, which will be the seminal book on artificial cranial deformation, and has entered negotiations with an editor. The last and most often cited book in this field comes from 1931. Professor O'Brien's book will both update and enhance research and supply valuable information for fields of study from such disciplines as: physical and cultural anthropology, archaeology, paleopathology, bioarchaeology, history, biology, neurology, and cranial growth and development, and potentially many others. Other products of his PDA are a chapter in a significant bioarcheology text in Argentina (in which he translated his work into Spanish), and two journal articles in press. Professor O'Brien incorporates his research into his UNI classes by discussing research methodology and international anthropological fieldwork.

**WALTER, MICHAEL, ASSOCIATE PROFESSOR, BIOLOGY, 17 YEARS OF SERVICE, FALL 2013**

*DNA sequence-mapping, structural protein determination and analysis of two Bacillus anthracis spore-adhering bacteriophages*

Professor Walter spent a portion of his PDA in the laboratory of Dr. Michael Thomas of Idaho State University, who provided free high-throughput DNA sequencing (worth tens of thousands of dollars), where Professor Walter completed the genomic analysis of 48 bacteriophages (phages are viruses of bacteria), including the 2 originally planned phages SBP8a and QCM8a, useful in detection and control of spores of *Bacillus anthracis*, the causal agent of anthrax disease. These two phages both adhere to spores and kill anthrax bacteria. QCM8a is used to signal the presence of air-borne spores in an electronic detector. Phage SBP8a can kill vegetative bacteria emerging from spores if co-applied with spores on inanimate surfaces. Completed genomic DNA sequences of both of these phages and 46 others show close similarity in location of structural genes. Gene sequences of phage particle structural proteins, including genes responsible for the above-described characteristics, appear in 'structural protein clusters' fairly typical of the larger, tailed phage types, Siphoviridae and Myoviridae. **The main objectives of the PDA were met.** Some work on a related type of sequencing is ongoing. Professor Walter has submitted a journal article and made a conference presentation on this research, and another journal article is in preparation. This project has been a benefit to students, continuing Professor Walter's practice of generating phage-based microbiology projects in the Departments of Biology and Computer Science at UNI.

**YATES, JACK, PROFESSOR, PSYCHOLOGY, 39 YEARS OF SERVICE, FALL 2013**

*Using Social Science Strategies to Reduce Residential Energy Use*

Professor Yates' research for the last ten years has been to investigate ways of changing the energy consumption behaviors of Americans in order to help slow the progression of climate change. His project had three objectives:

- Analyze the data that was currently being collected for the Get Energized Iowa project, then underway and finishing in the winter of 2012-13, and write an article for publication. **This goal was accomplished.**
- Analyze the data that was currently being collected for the Green Community Campaign EPSCoR project, then currently underway with data collection finishing August, 2013, and write an article for publication. The data was analyzed, but publication is not possible due to the small sample size that was out of Professor Yates' control.
- Investigate next steps for his research program of reducing energy use and slowing climate change. This goal led to two tracks of research post-PDA: (a) an examination of the persistence of the energy savings found in the Get Energized Iowa project; (b) data collection from a small set of focus groups held across Iowa, to develop a set of strategies leading to more effective communication about reducing energy use.

Professor Yates has made five presentations on his work at both Iowa and national conferences, and has received a \$13,000 grant as a result of the PDA.

**ZHU, JIN, ASSOCIATE PROFESSOR, TECHNOLOGY, 9 YEARS OF SERVICE SPRING 2014**

*System Modeling and Optimization of an Ambient Energy Harvesting Wireless Sensor Network*

Traditionally, monitoring of structures such as buildings, bridges, overpasses, and highways is performed through periodic visual inspections. Remote wireless monitoring of structures has gained a lot of interest in recent years. However, one major drawback of a remote monitoring system is battery-powered wireless sensor nodes. Because of the remote, even inaccessible, placement of these devices, getting to the sensors simply to replace the batteries can become an expensive and tedious, if not impossible, task. Energy harvesting technologies provide an alternative cost-effective solution to the power requirement for wireless sensor networks. The sensing system will rely on harvesting solar, vibration, or thermal energy from the local environment to power the sensors and sending units. Thus, a wireless network system can be deployed in the field without the need for battery replacement. **The objectives of the PDA were met.** Professor Zhu developed a realistic system model and tested it using simulations based on empirical data collected in previous and current projects. She found that a wireless sensor network can be self-sustainable and the system operation can be optimized by controlling the operating modes (positive energy flow, direct power mode, negative energy flow, hibernate) of the wireless nodes adaptively according to the energy levels and input power level, including adjusting sampling rate and duty ratio of data collecting, and carefully selecting the capacity size of the energy storage device. Professor Zhu has submitted a conference paper and she and researchers from Coherent Technical Services, Inc. have submitted a grant proposal to the U.S. Navy Small Business Innovation Research program. The research results will be very useful in the design of self-sustainable wireless sensor networks that can be found in many applications, such as infrastructure monitoring and medical condition monitoring of patients that will benefit the citizens of Iowa. Professor Zhu also involves UNI undergraduates and graduate students in her research.